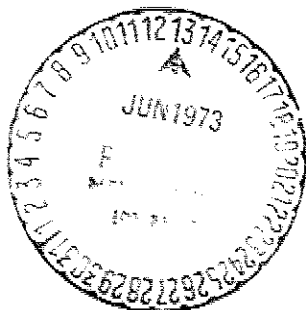


**JOHN F. KENNEDY
SPACE CENTER**

GP-929A

Revised January 31, 1973

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OTV CAMERA

REFERENCE HANDBOOK

SKYLAB/ASTP

(NASA-TM-X-69526) OTV CAMERA REFERENCE
HANDBOOK SKYLAB/ASTP (NASA) 85 p HC
\$8.25

CSCD 09P

N73-25174

G3/07 Unclass
05520

VIDEO SYSTEMS BRANCH

OIS AND TELE COMMUNICATIONS DIVISION

INTRODUCTION

1.1 PURPOSE

This publication defines all Television Camera locations as well as the specific area to be covered by each camera to provide the Television coverage of Skylab testing and launches in accordance with operational and engineering requirements.

1.2 SCOPE

This publication is to be used as a reference by engineering, operations and other cognizant personnel who wish to obtain information pertinent to television requirements specified in the Skylab Program Support Requirement Document (PSRD), KSC Skylab Requirements Document and KSC Requirement Document.

1.3 TELEVISION REQUIREMENTS

Television coverage of all launch area and vehicle operations is required for real-time operational and engineering analysis, public information and by all NASA agencies. To meet these requirements the Kennedy Space Center (KSC), LC-39, Operational Television System (OTV) utilizes television cameras equipped with pan and tilt units and zoom lenses which are remotely controlled from the Launch Control Center (LCC). This equipment and mode of operation enable KSC to provide television coverage of Skylab prelaunch functions, launch functions and events of the first 1,300 feet of vehicle flight.

1.4 CAMERA LOCATIONS

The following photographs and accompanying locator views illustrate the location and fields of view of each camera on the Mobile Launchers 1 and 2, pad aprons, LC-39A and B perimeter camera sites, Mobile Service Structure (MSS), and the Vehicle Assembly Building (VAB) roof.

Due to the flexibility of the system the entire fields of view cannot be shown and only those areas of primary concern shall be depicted.

The photographs and locator views are to be used specifically to locate and identify areas to be covered by the cameras and should not be used for study of the illustrated item as such. Where it is not possible to obtain photographs of the Skylab vehicles, the Apollo photographs have been used.

1.5 INDEX

Table 1 is an index for camera fields of view for locating the page for any specific camera.

TABLE 1A SKYLAB 1 CAMERAS

<u>Camera No.</u>	<u>Page</u>	<u>Camera No.</u>	<u>Page</u>	<u>Camera No.</u>	<u>Page</u>	<u>Camera No.</u>	<u>Page</u>
P1	9	9A	16	18A	24	33A	32
P2	9	10A	17	24A	24	34A	33
1A	10	11A	18	26A	25	35A	35
2A	11	12A	19	27A	26	36A	35
3A	12	13A	20	28A	26	37A	36
4A	14	14A	21	29A	27	38A	37
5A	15	15A	21	30A	28	39A	39
6A	15	16A	22	31A	30	41A	39
7A	16	17A	23	32A	31	42A	40

TABLE 1B INDEX FOR CAMERA FIELDS OF VIEW
SKYLAB 2, 3, 4, and ASTP

Camera No.	Page	Camera No.	Page	Camera No.	Page	Camera No.	Page
AAS-1	42	16B	50	29B	58	46B	71
AAS-2	42	18B	50	30B	59	47B	71
AAS-3	43	19B	51	31B	61	48B	73
AAS-4	43	21B	51	32B	62	49B	74
2B	44	22B	52	33B	63	50B	75
3B	44	23B	53	34B	64	51B	76
4B	46	24B	53	35B	65	52 ^a	77
9B	47	25B	55	36B	66	53B	77
10B	48	26B	55	38B	67	54B	78
13B	48	27B	56	41B	69	55B	79
14B	49	28B	57	42B	70	56B	80
15B	49					57B	81
						Roof	82

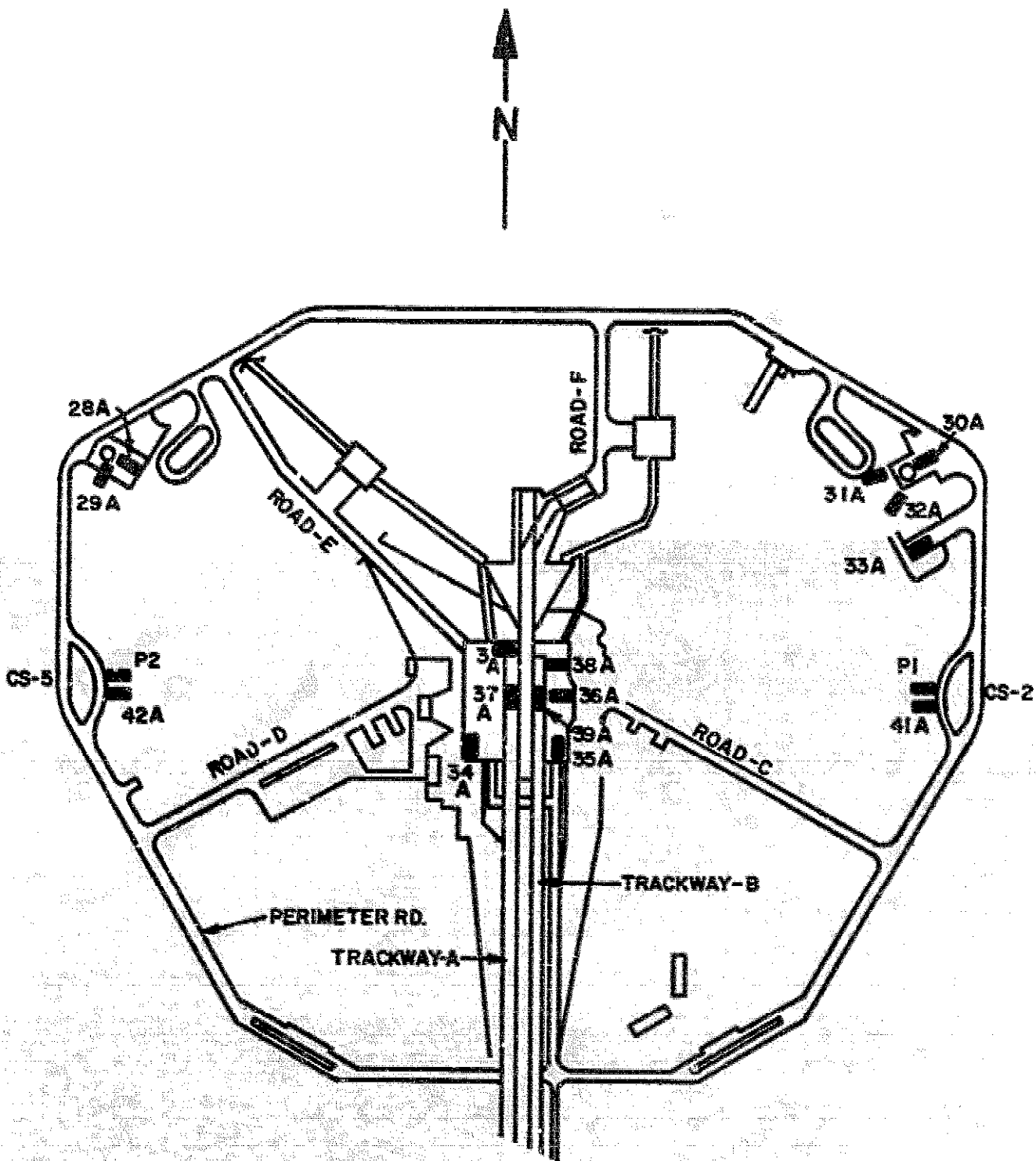


FIGURE 1. LC-39A camera locations

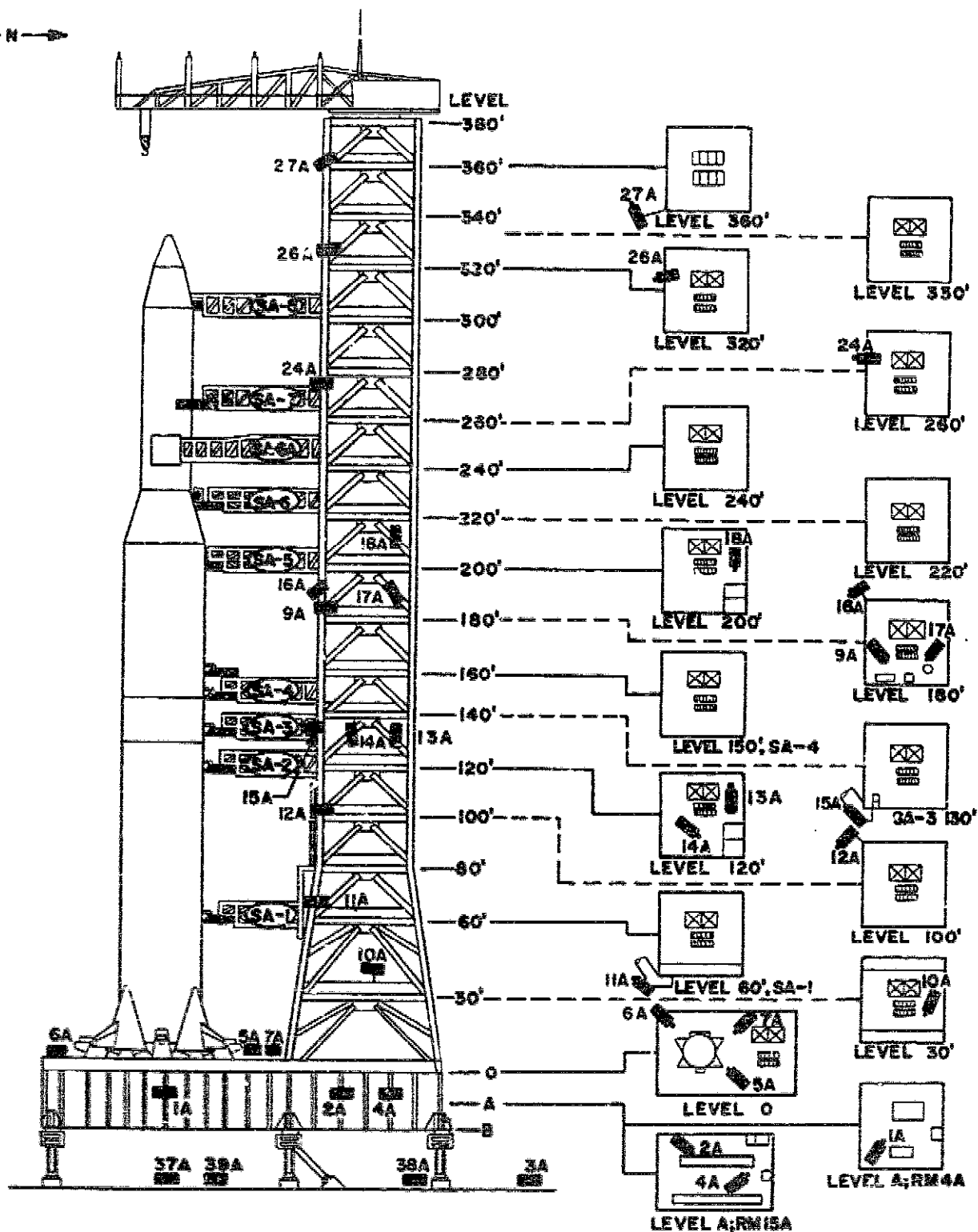


FIGURE 2. ML-2 camera locations

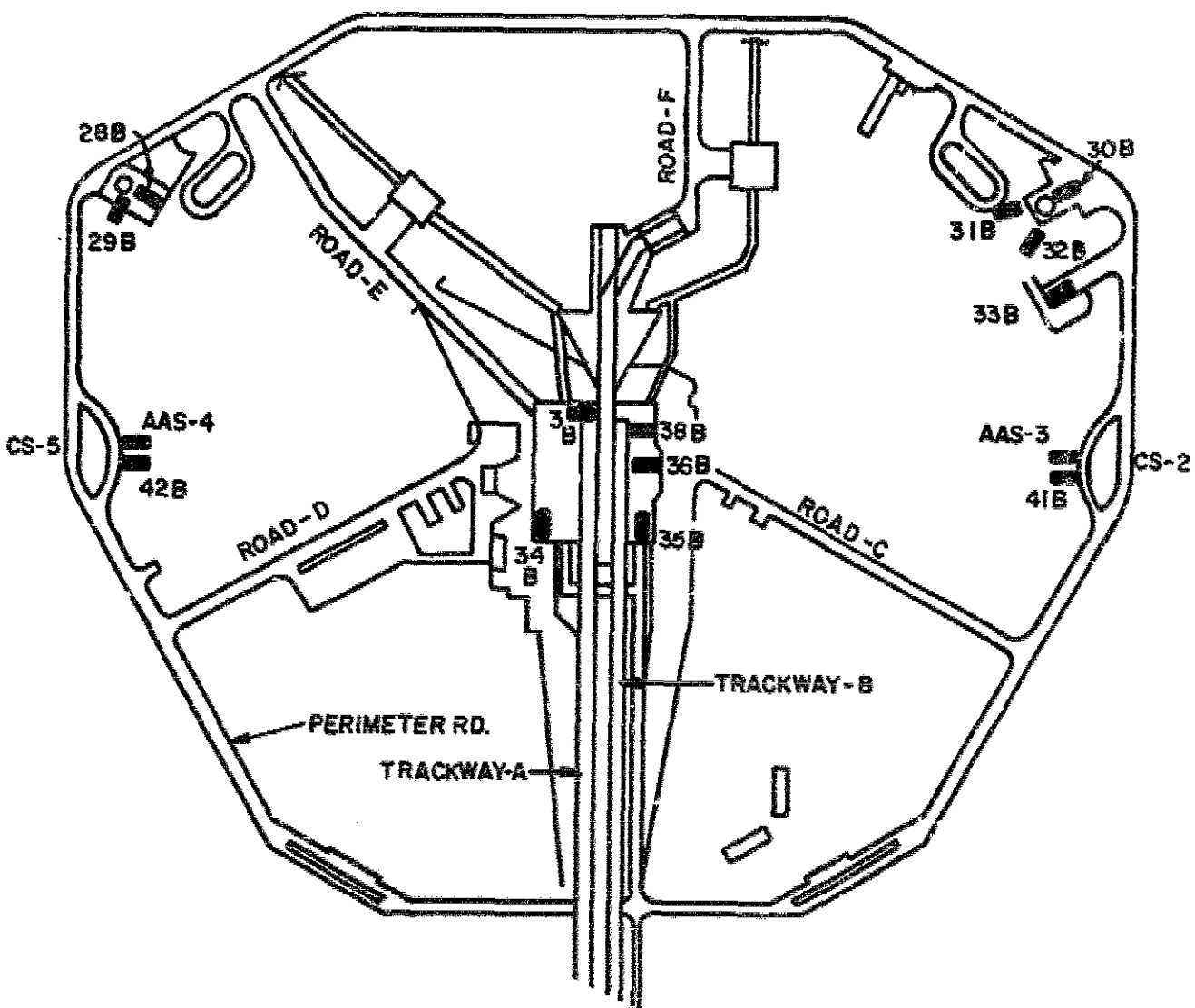


FIGURE 3. LC-39B camera locations

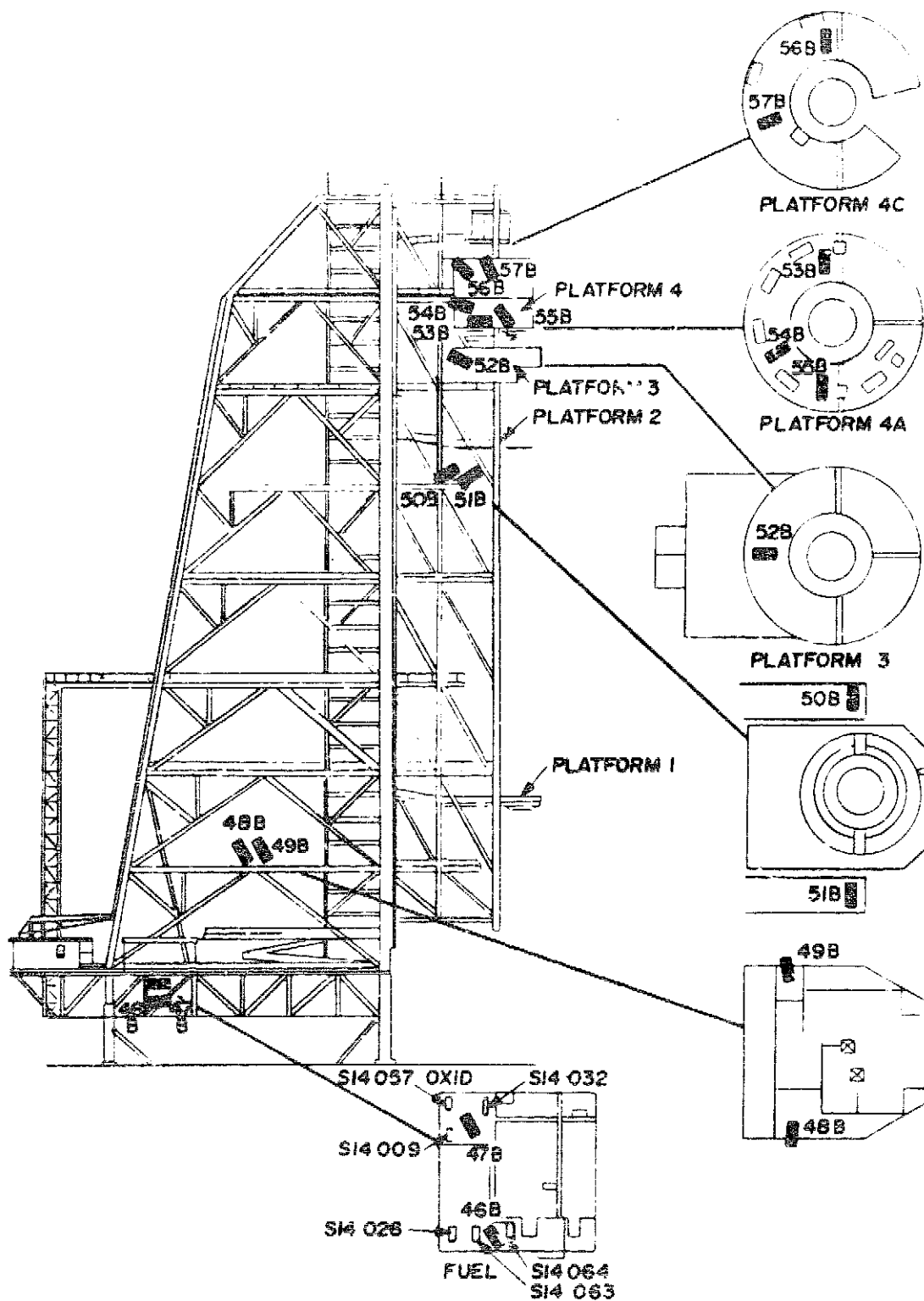
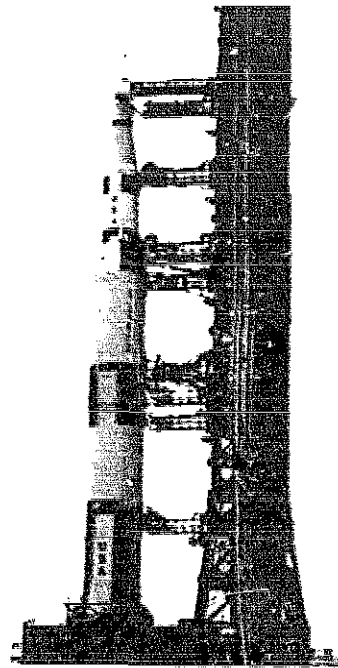
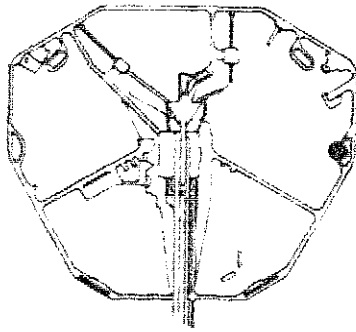
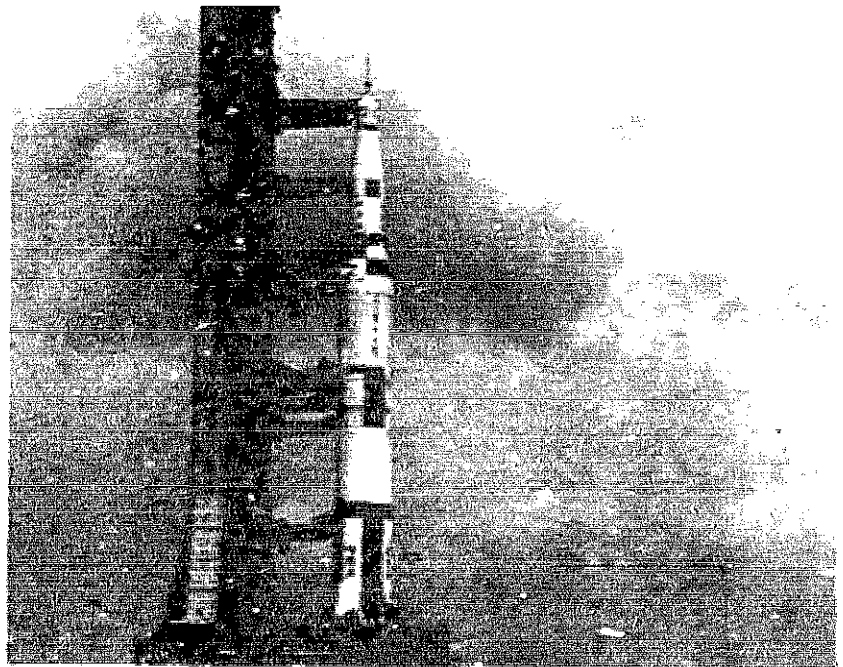
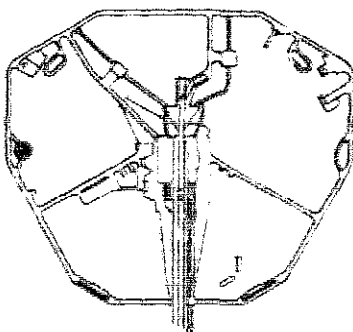


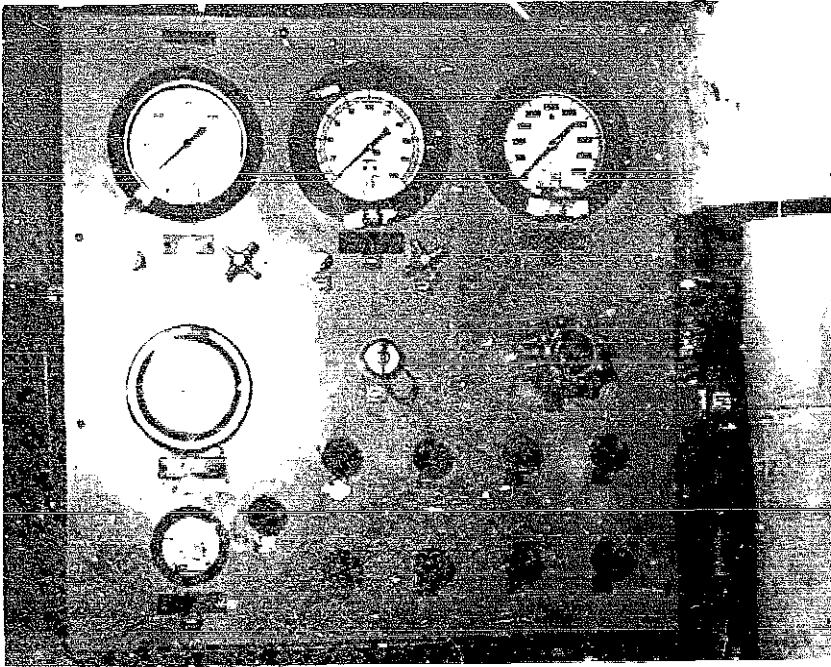
FIGURE 5. MSS camera locations



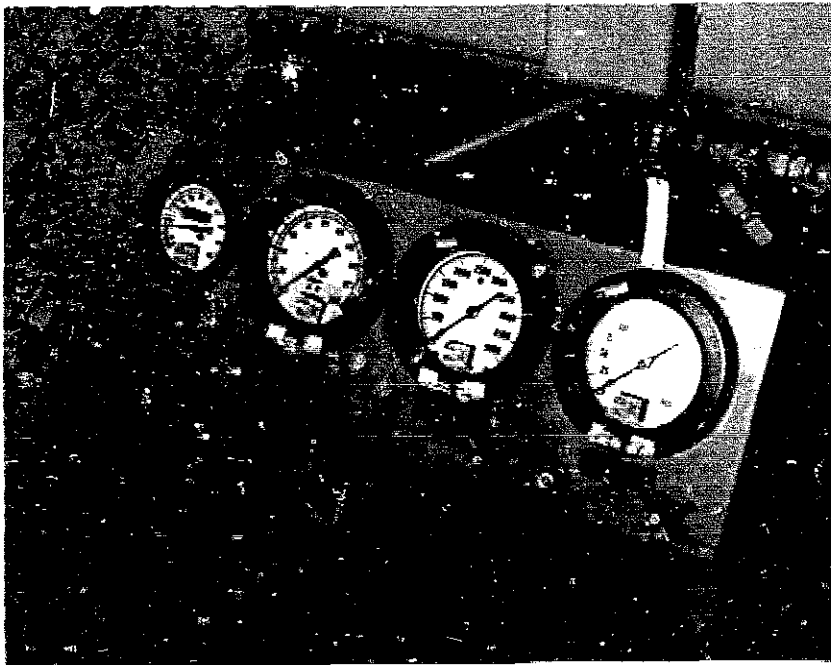
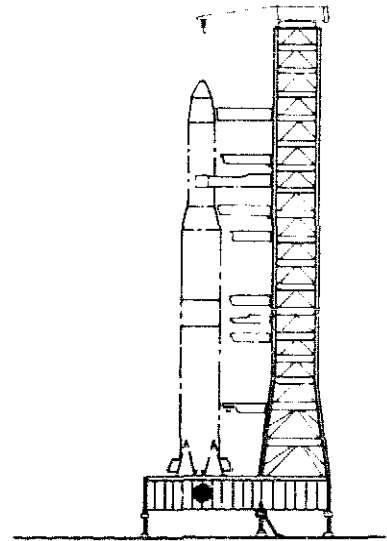
CAMERA No. P1; located LC39A Perimeter Site 2; coverage: ML, Vehicle, Service Arms and Primary Damper.



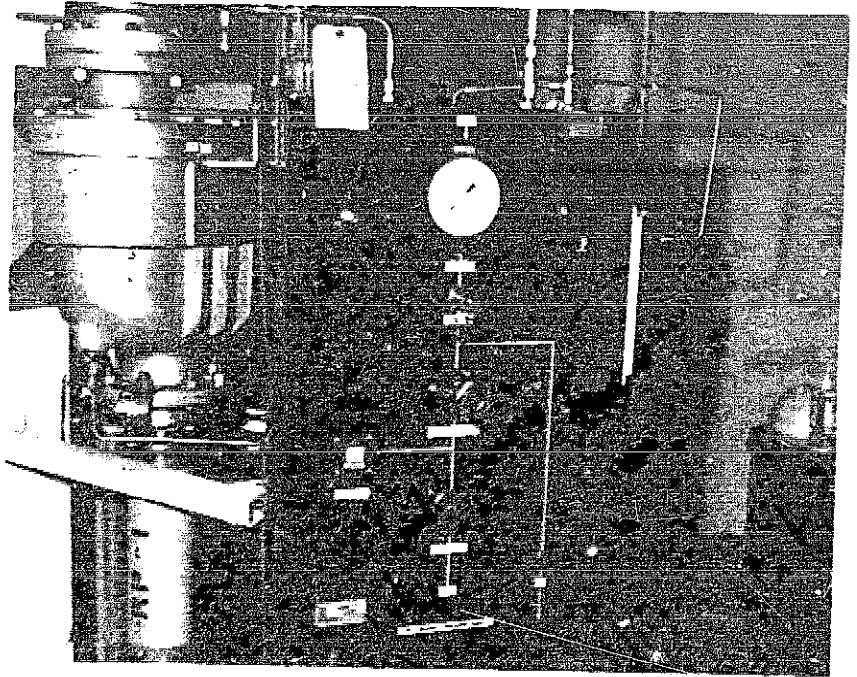
CAMERA No. P2; located LC39A Perimeter Site 5, coverage: ML, Vehicle, Service Arms and Primary Damper.



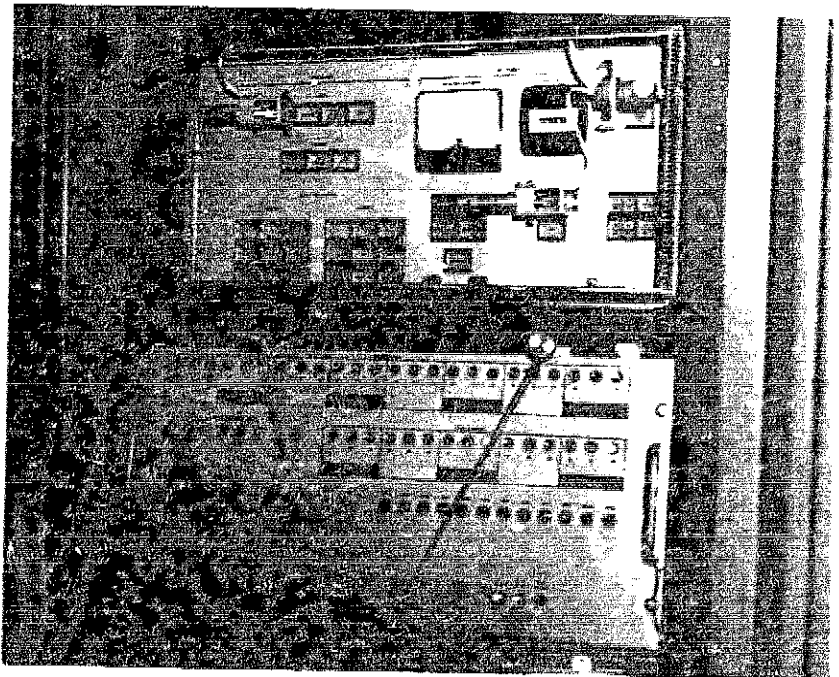
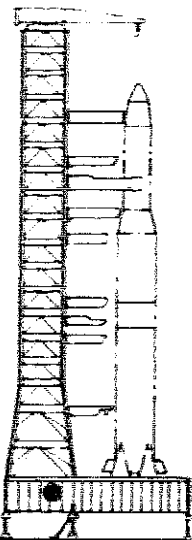
CAMERA No. 1A; located ML-2 Rm. 4AB; coverage:
hydraulic service unit.



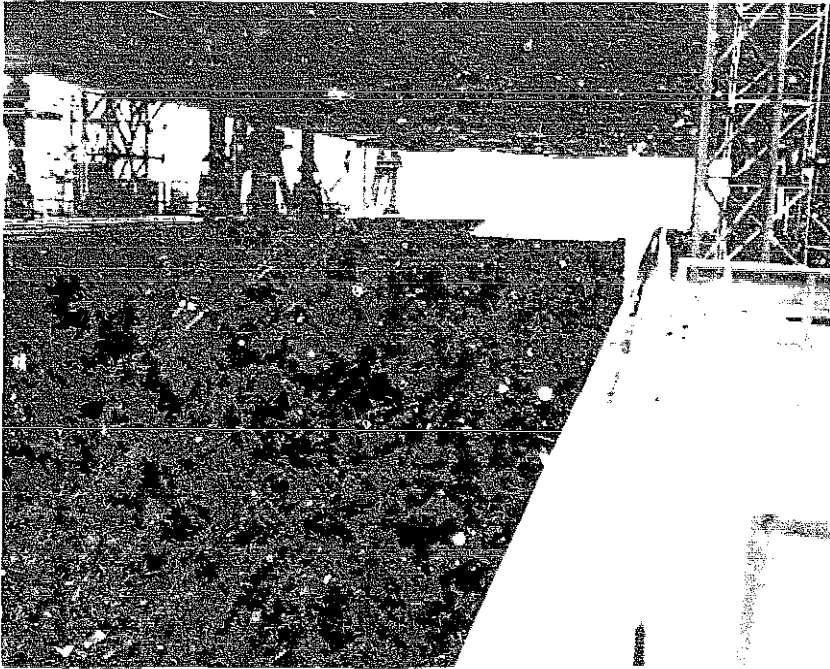
CAMERA No. 1A (Cont'd.); hydraulic service unit.



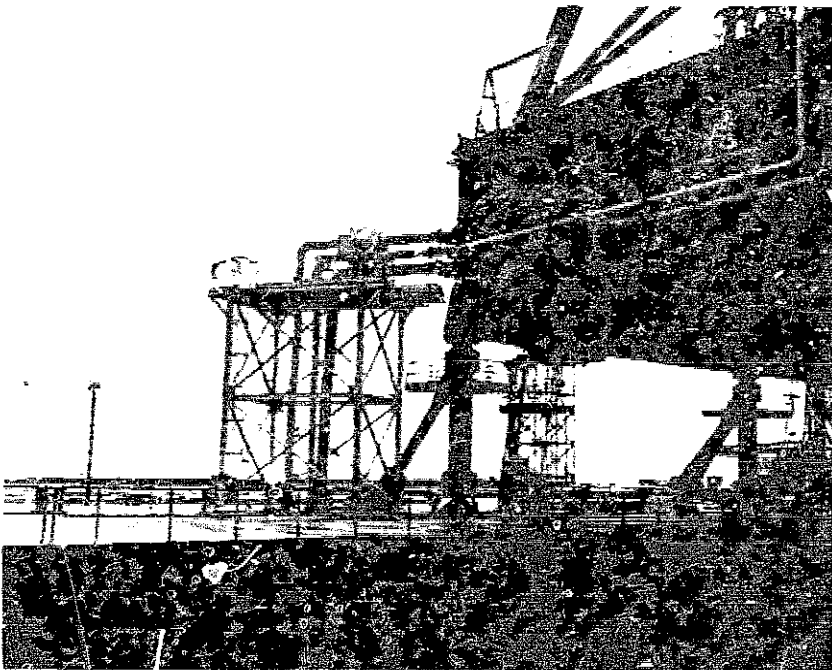
CAMERA No. 1A (Cont'd.); RP-1 piping.



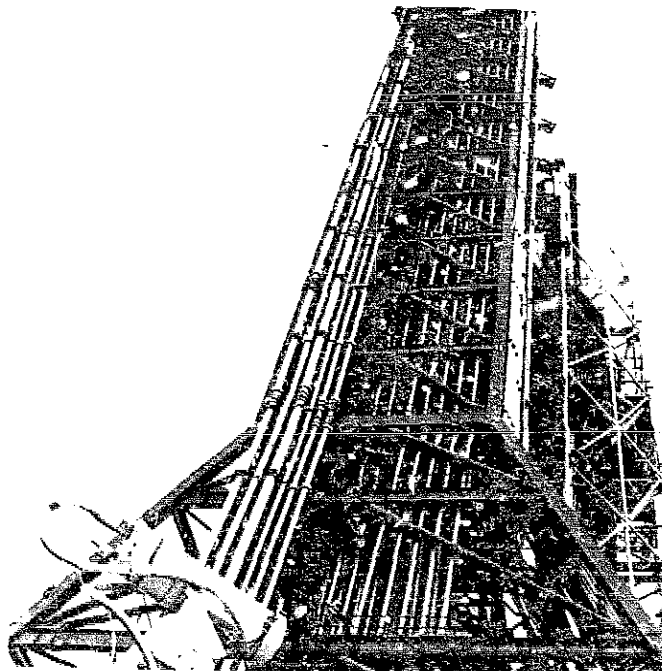
CAMERA No. 2A; located ML-2 Rm. 15A; coverage: RCA-110 computer maintenance panel.



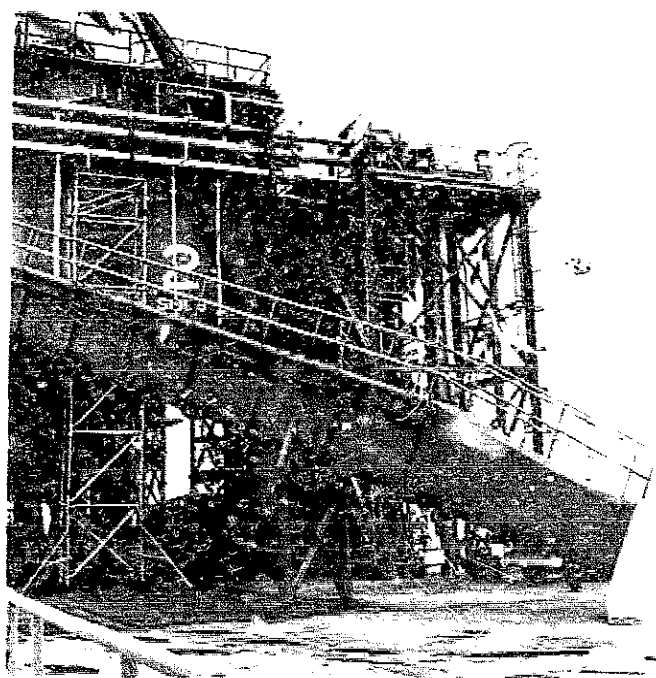
CAMERA No. 3A; located Pad Apron at NW corner of flame trench; coverage: flame deflector cooling water.



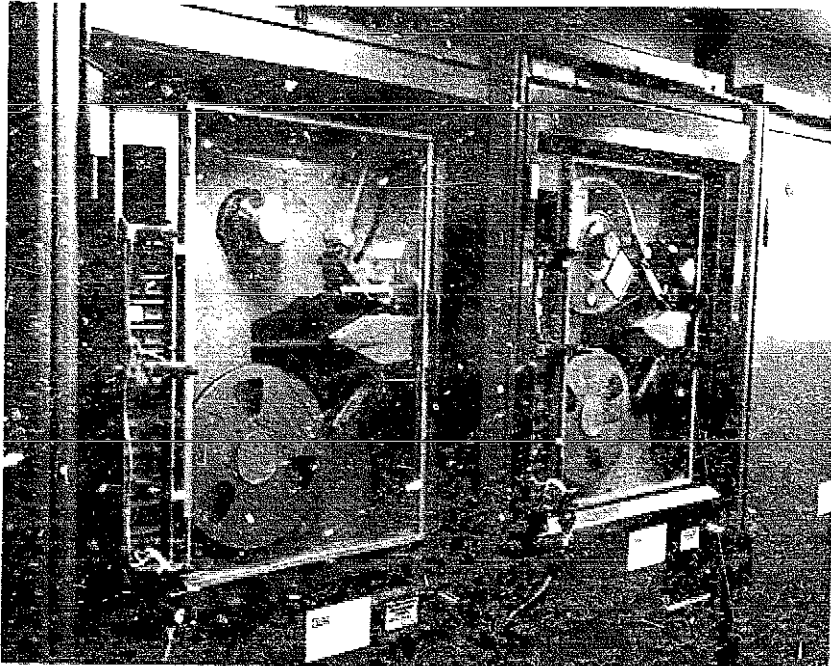
CAMERA No. 3A (Cont'd.); LH2 disconnect tower piping and ML connection.



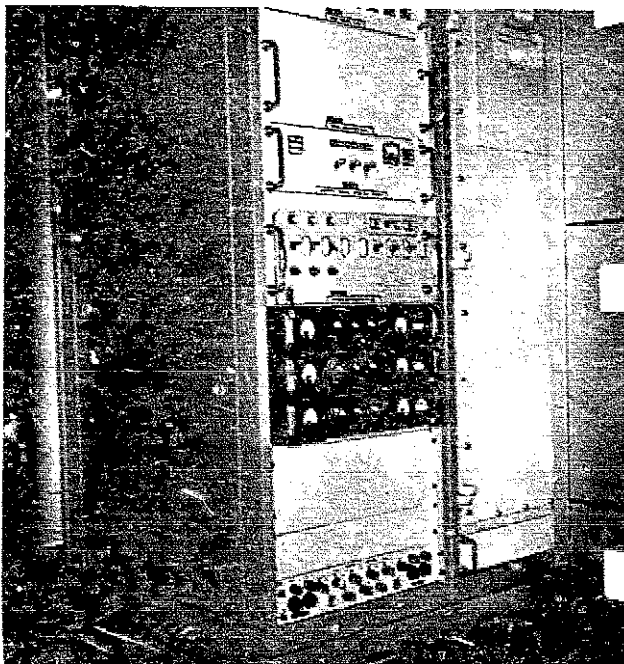
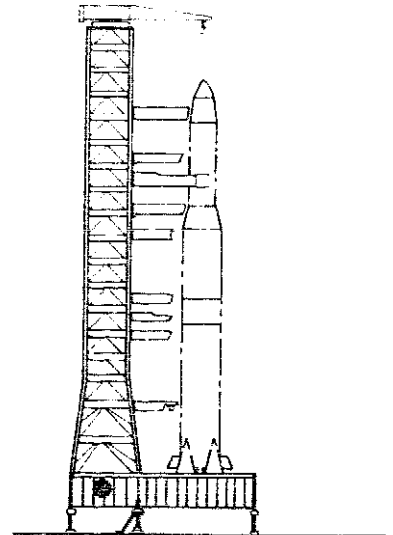
CAMERA No. 3A (Cont'd.); LH2 vent piping, ML side 3.



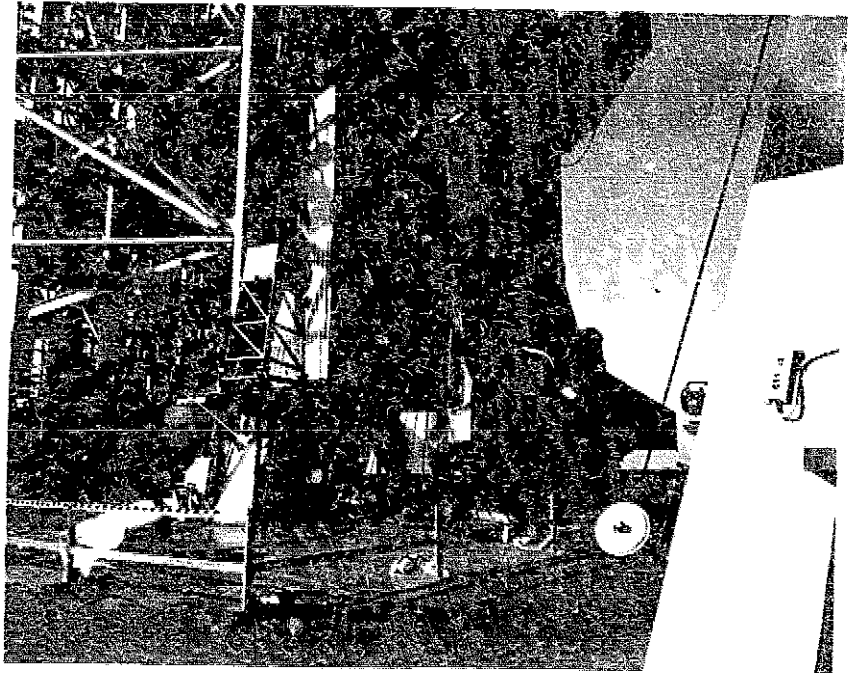
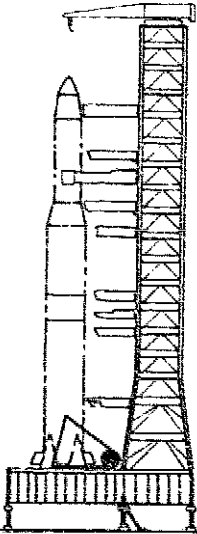
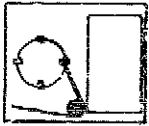
CAMERA No. 3A (Cont'd.); LOX disconnect tower piping and ML connection.



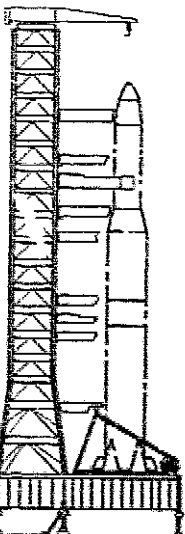
CAMERA No. 4A; located ML2 Rm. 15A; coverage: RCA 110 computer astronics equipment.



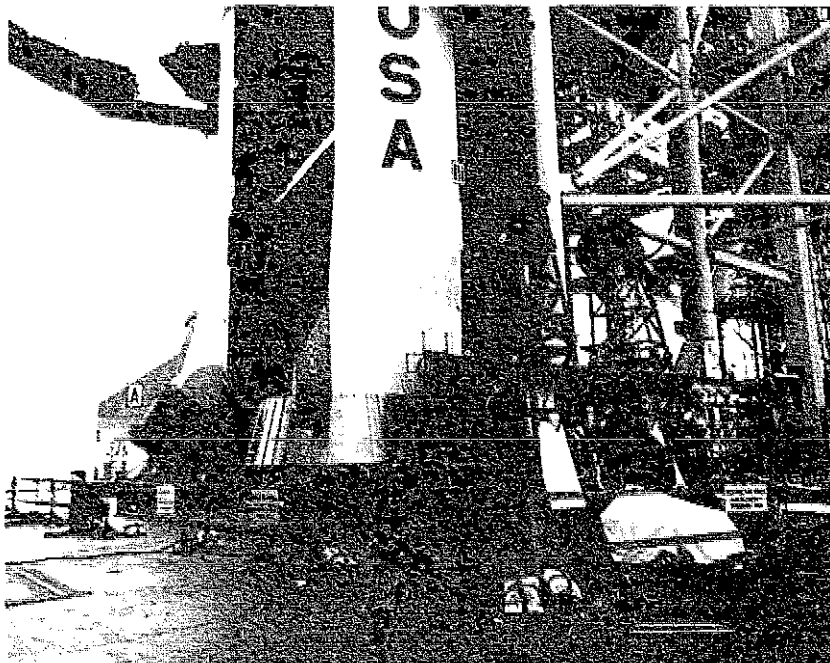
CAMERA No. 4A; (Cont'd.) discrete equipment.



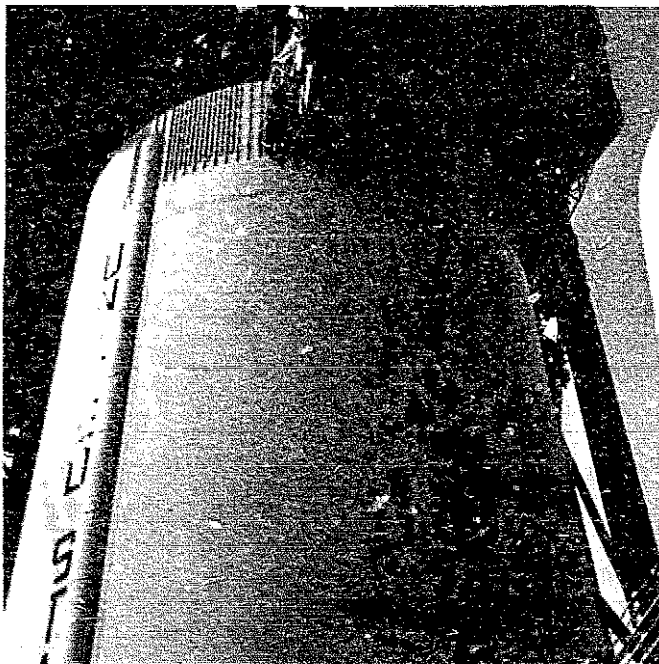
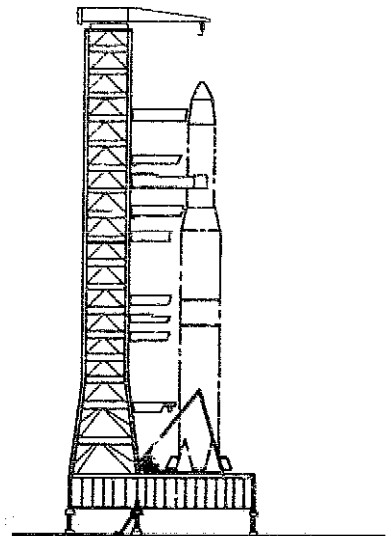
CAMERA No. 5A; located ML2 0-foot level, east side;
coverage: tail service mast 1-2.



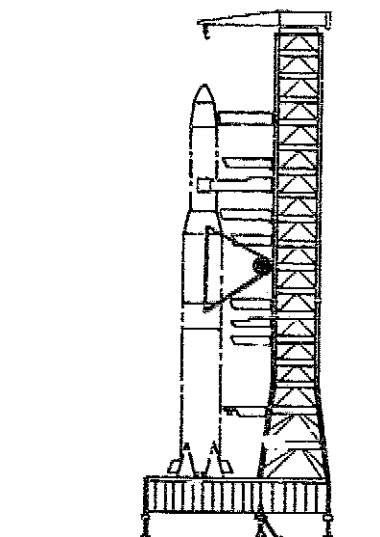
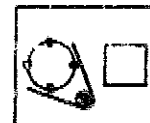
CAMERA No. 6A; located ML2 0-foot level, SW corner;
coverage: tail service mast 3-4.

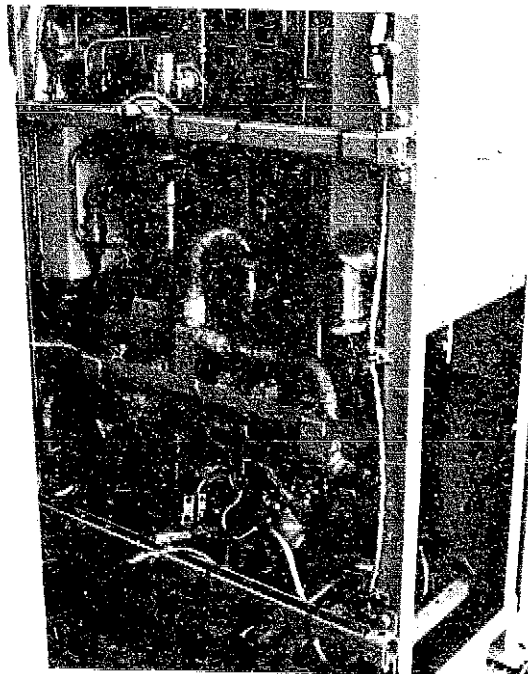


CAMERA No. 7A; located ML2 0-foot level, west side;
coverage: tail service mast 3-2.

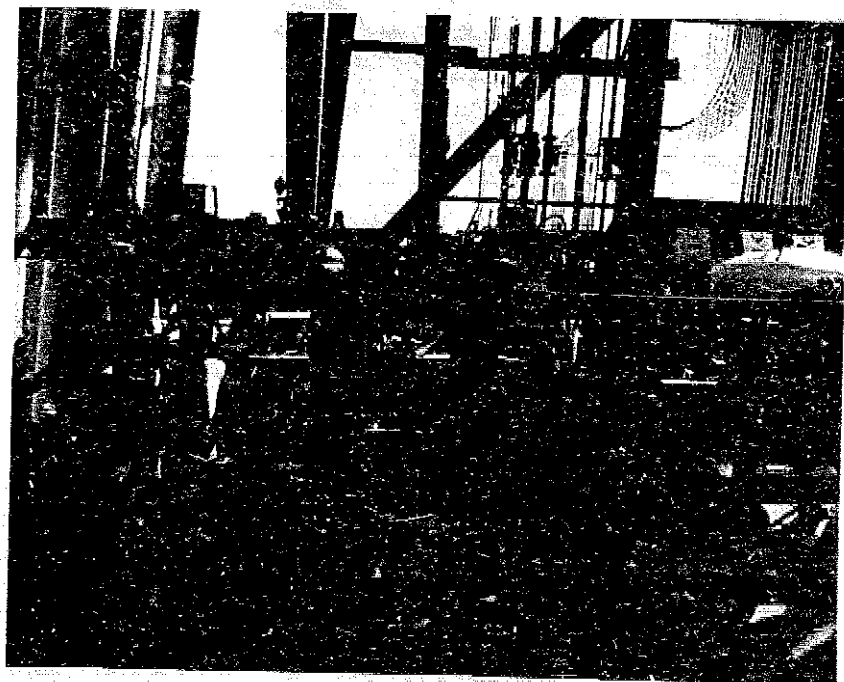
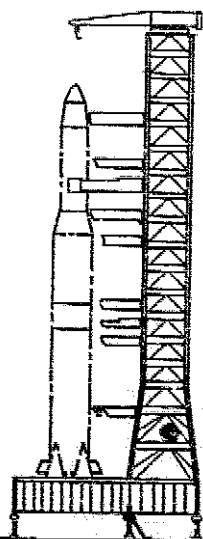
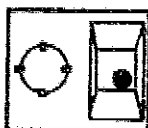


CAMERA No. 9A; located ML 180-foot level, Side I,
coverage: SII stage insulation.





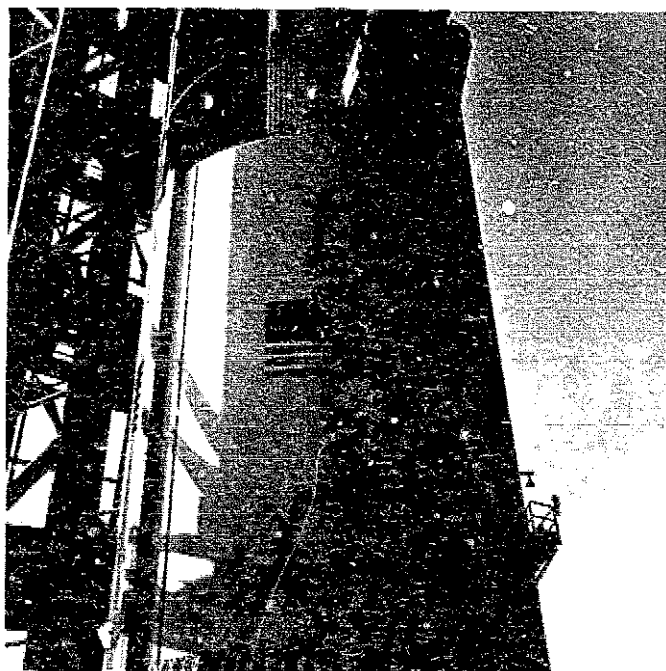
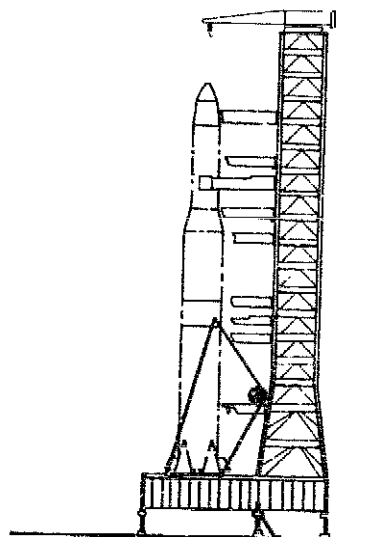
CAMERA No. 9A (Cont'd.); S7-41D console.



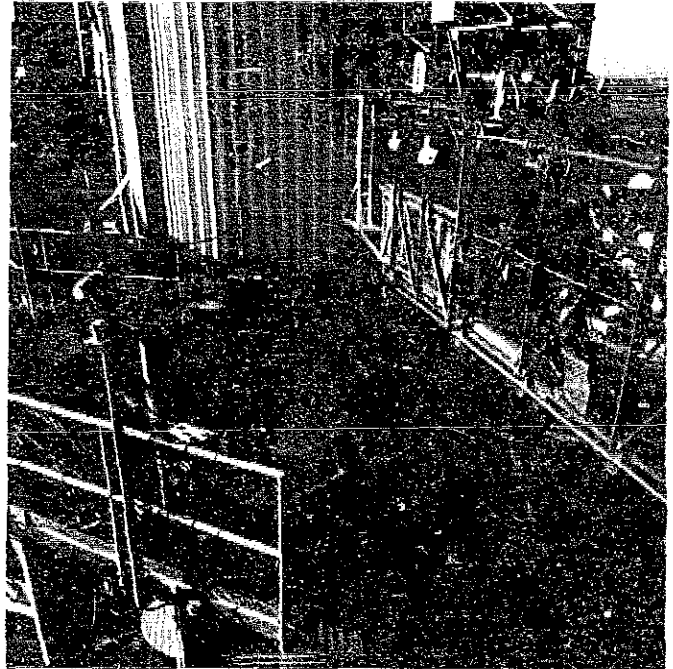
CAMERA No. 10A; located ML2 30-foot level, north side; coverage: LOX valve complex and 30' level general view.



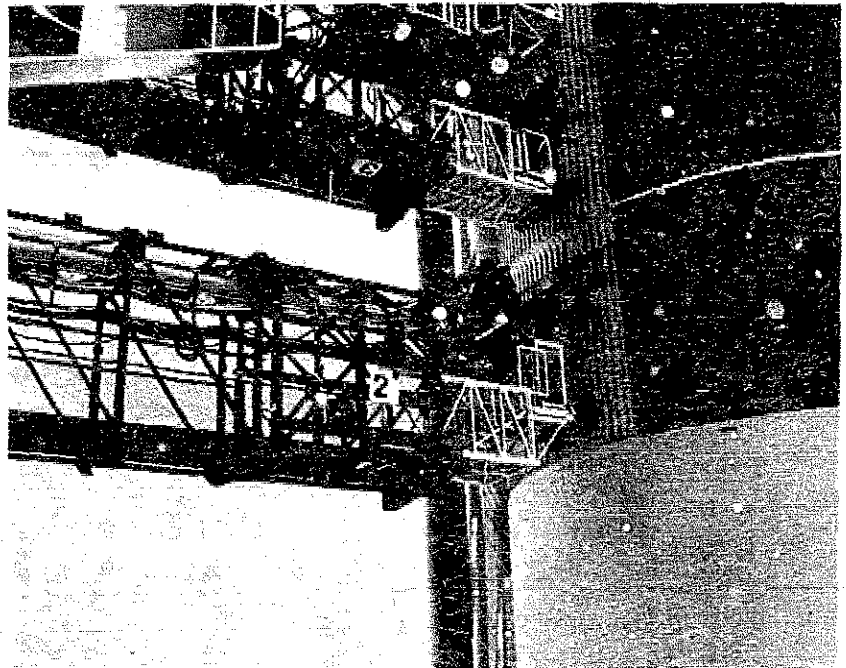
CAMERA No. IIA; located ML2 60-foot level, SE corner;
coverage: (view IIA) ML deck and SI-C stage.



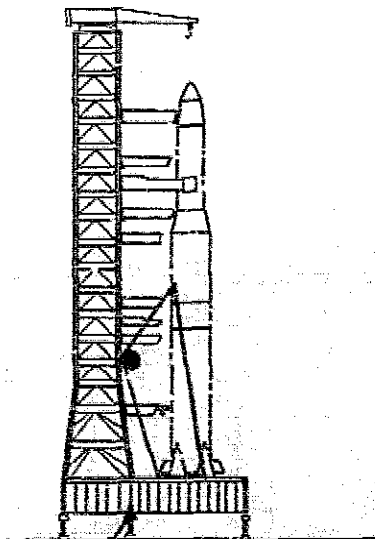
CAMERA No. IIA (Cont'd.); SI-C stage.

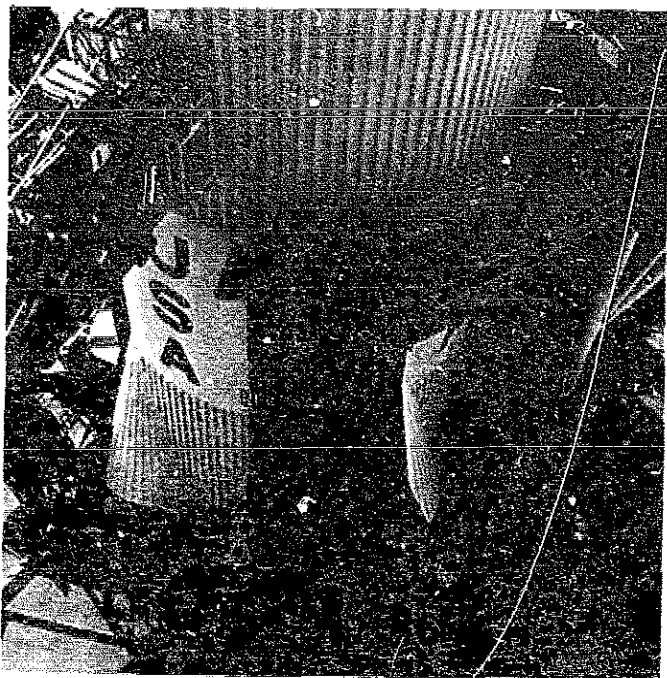


CAMERA No. IIA (Cont'd.); ML deck and service arm | operation.



CAMERA No. I2A; located ML2 100-foot level, SW corner; coverage: SI-C stage and service arms 2, 3, and 4.

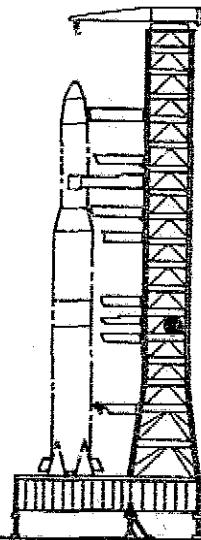
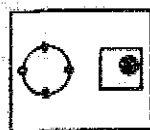


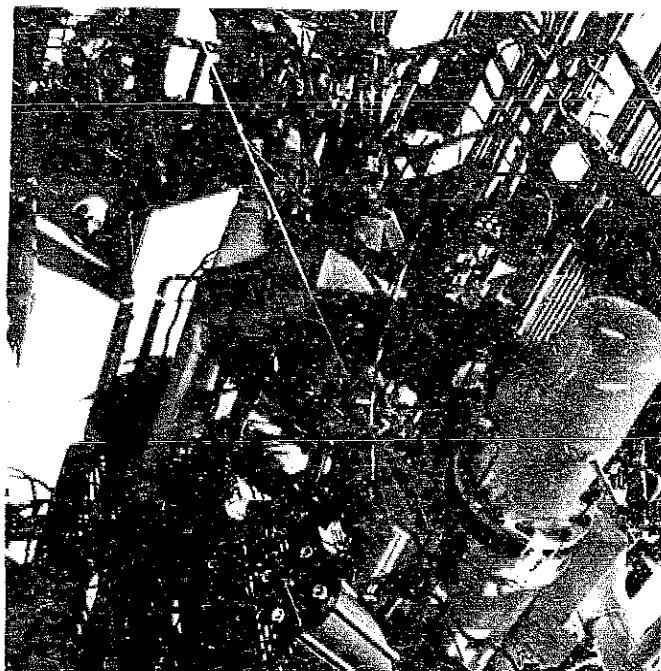
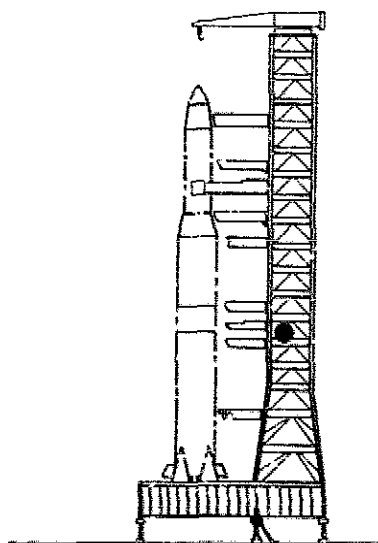


CAMERA No. 12A (Cont'd.); SI-C stage and ML deck.

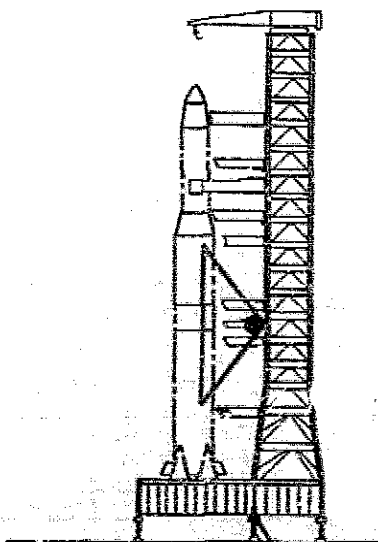
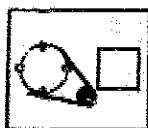


CAMERA No. 13A; located ML2 120-foot level, north side; coverage: LH2 valve complex.

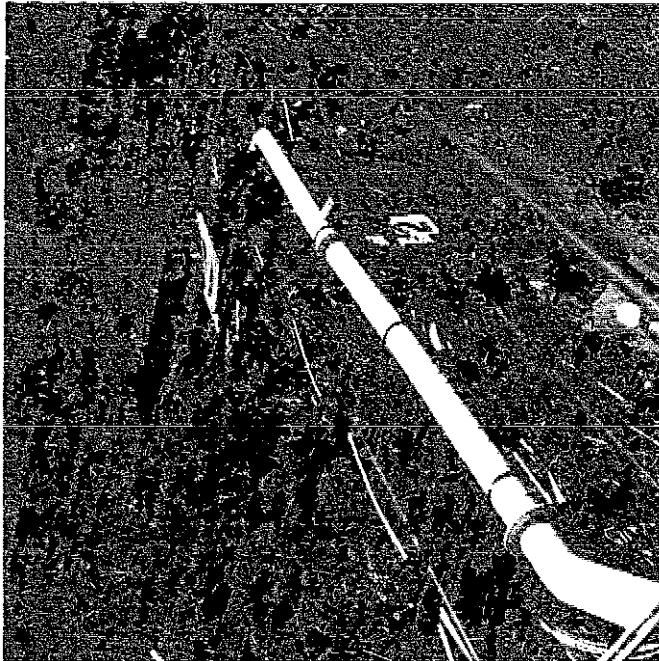




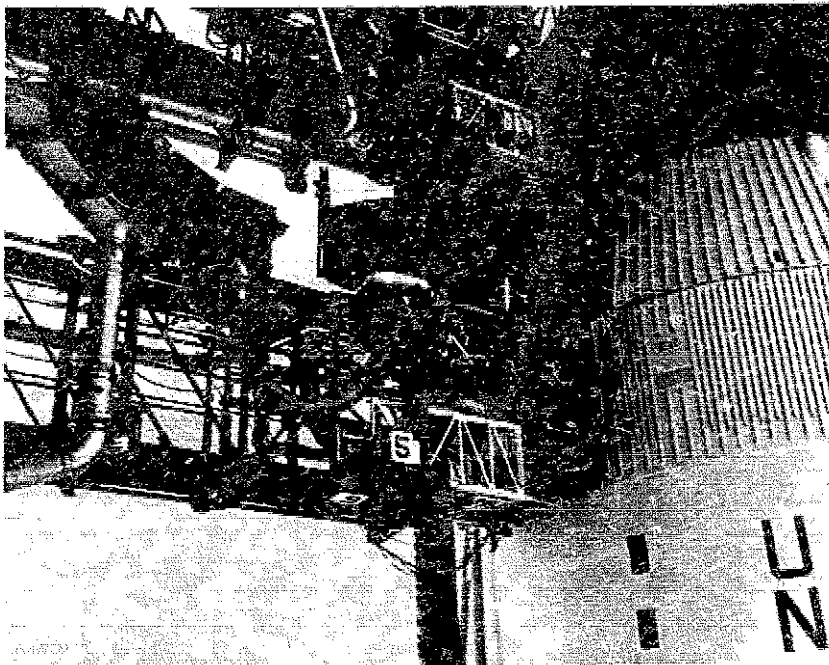
CAMERA No. 14A; located ML2 120-foot level, east side; coverage: LOX valve complex.



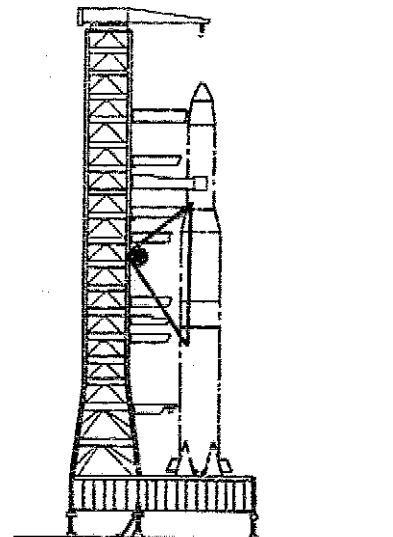
CAMERA No. 15A; located ML2 130-foot level, SE corner; coverage: Service Arm 4.

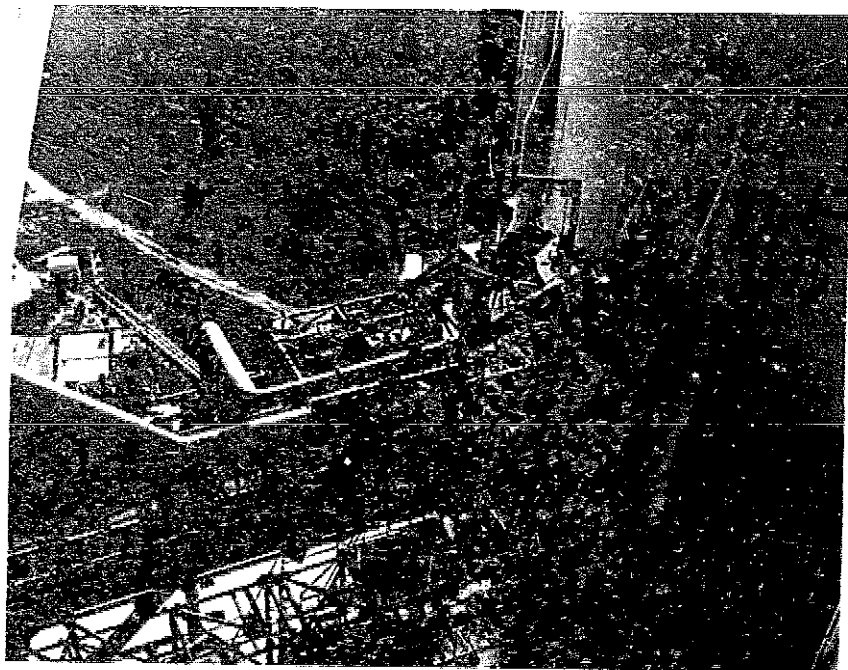


CAMERA No. 15A (Cont'd.); Service Arm 2.

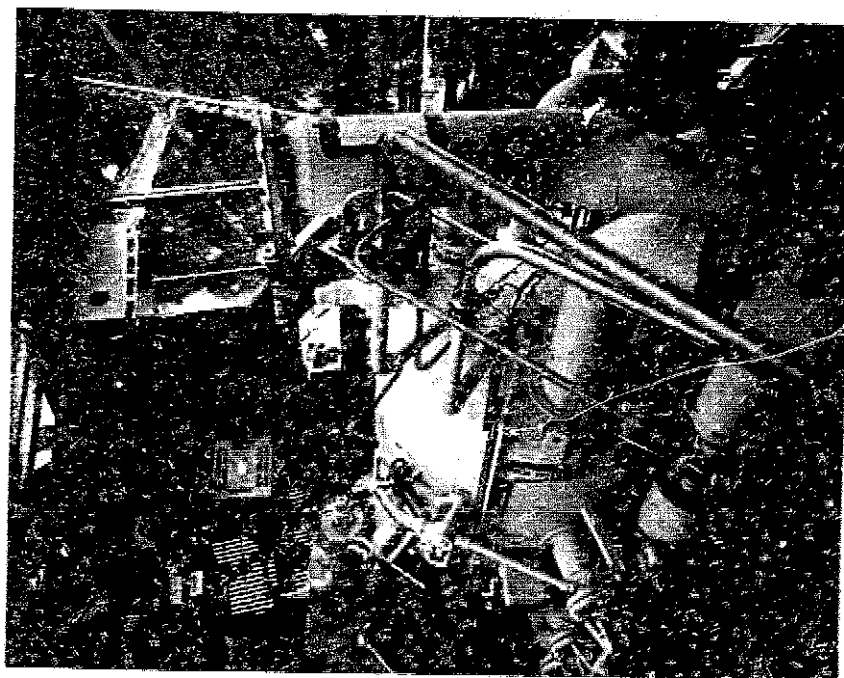
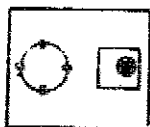


CAMERA No. 16A; located ML2 180-foot level, SW corner; coverage: SII stage, insulation and Service Arms 5 and 6.

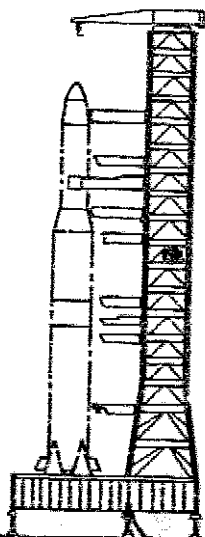


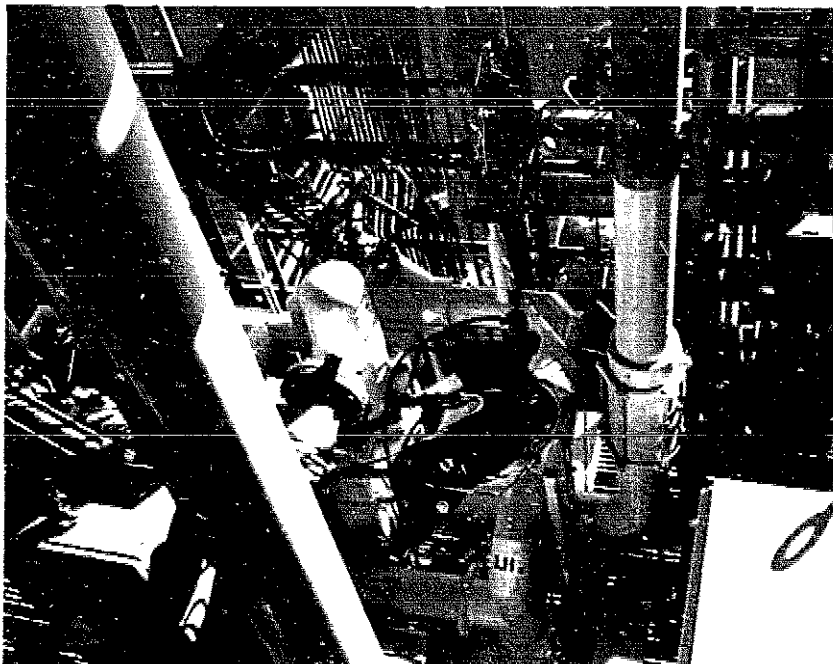


CAMERA No. 16A (Cont'd.); SII stage insulation and Service Arm 4.

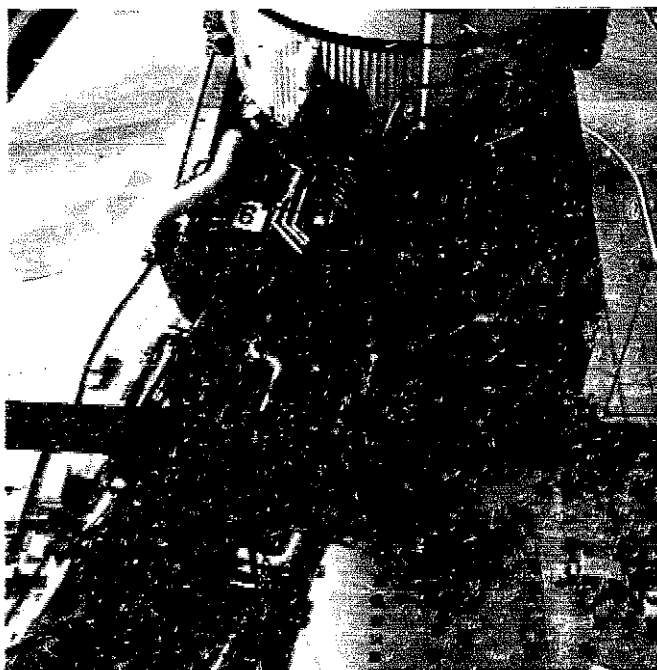
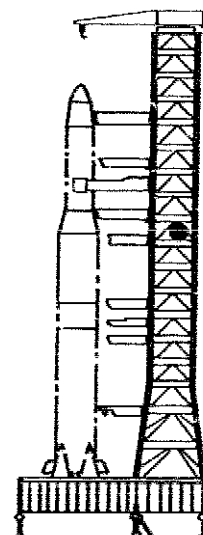
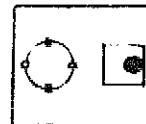


CAMERA No. 17A; located ML2 180-foot level, north side; coverage: LH2 heat exchanger and piping.

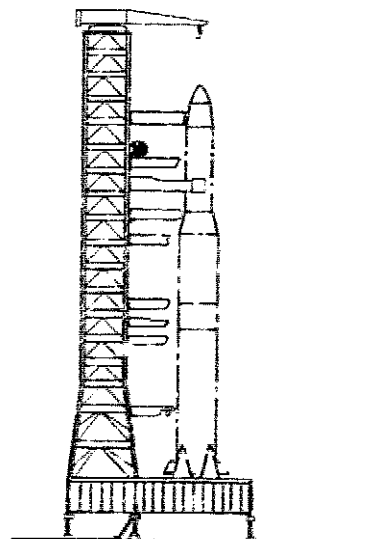
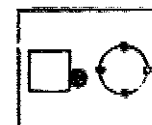


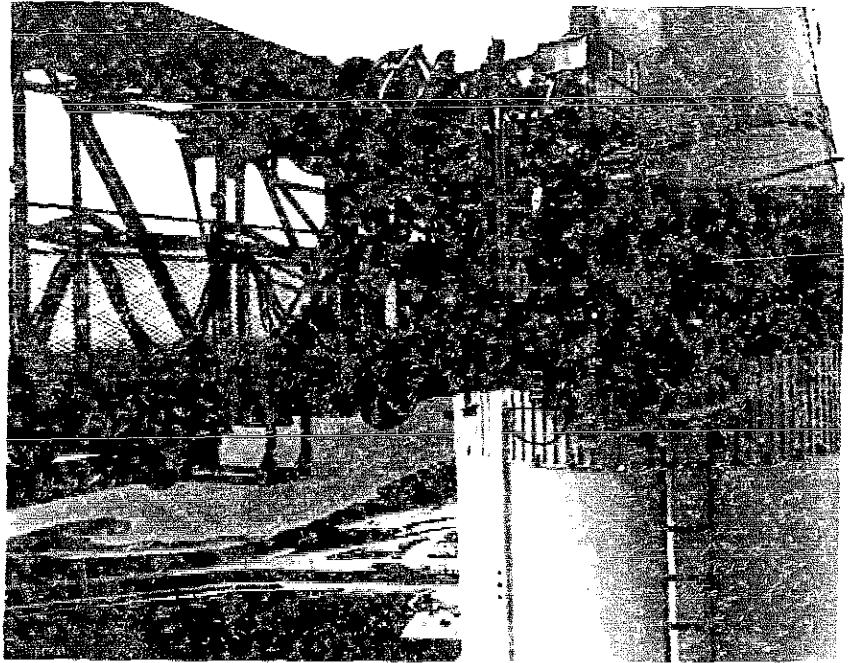


CAMERA No. 18A; located ML2 200-foot level, north side;
coverage: LH2 valve complex and general level view.

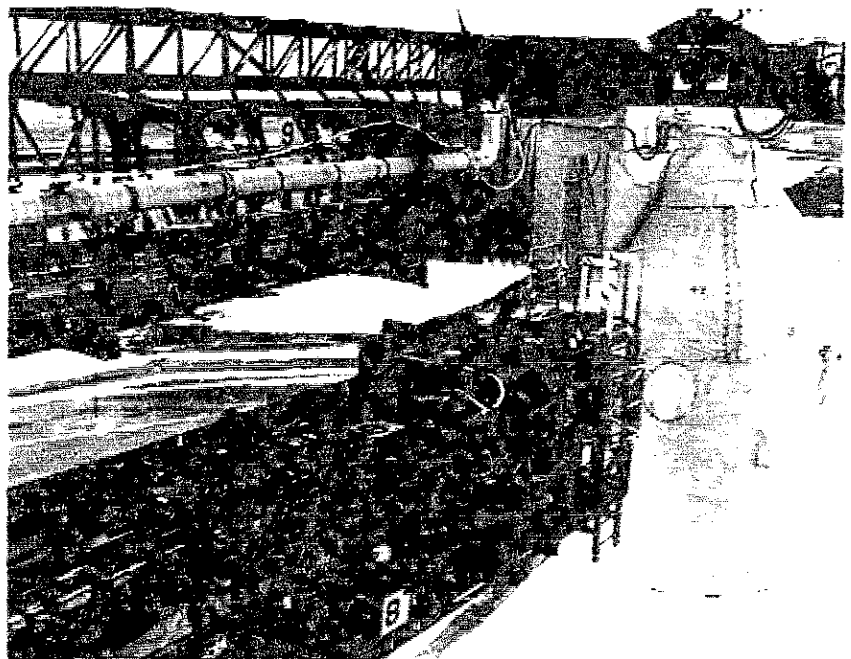
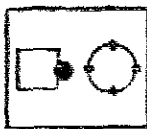


CAMERA No. 24A; located ML2 260-foot level, south side;
coverage: Service Arm 6, 7, 8 and IU access door.

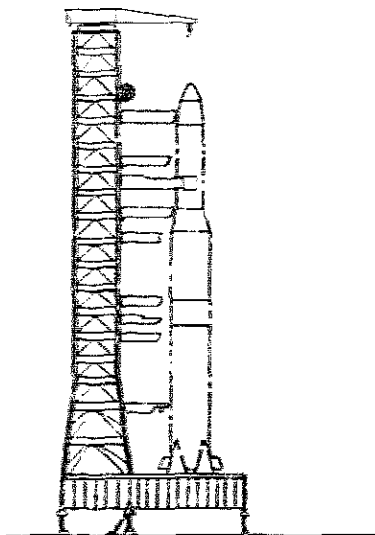


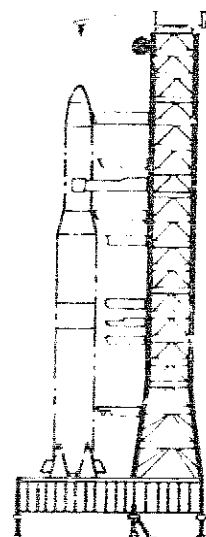
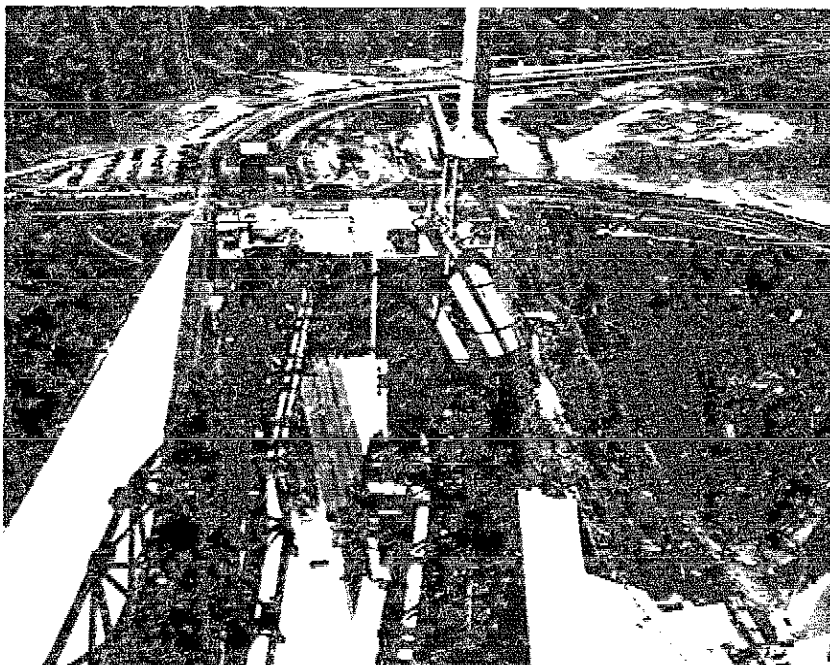


CAMERA No. 24A; (View 24B) Service Arm 7.

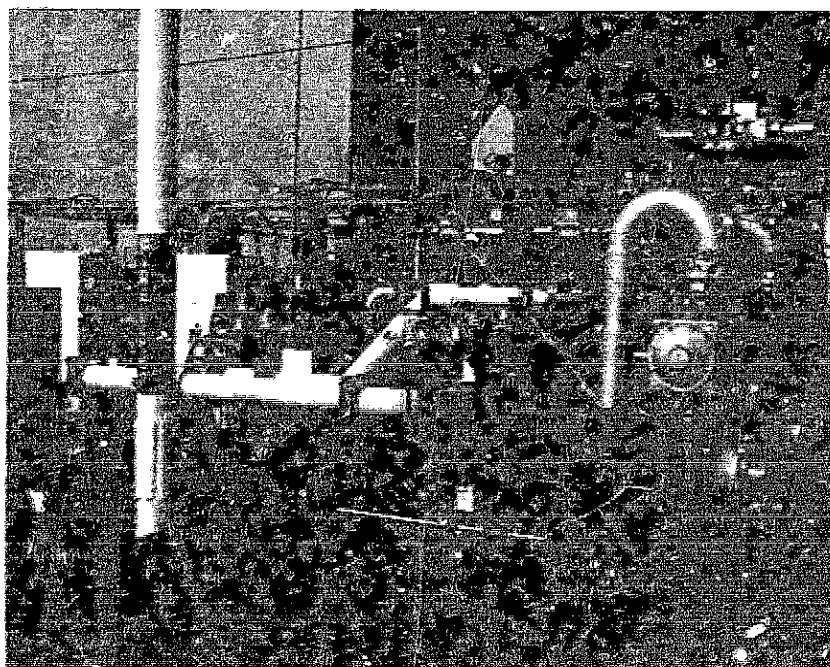


CAMERA No. 26A; located ML2 320-foot level, south side; coverage: top of water riser.

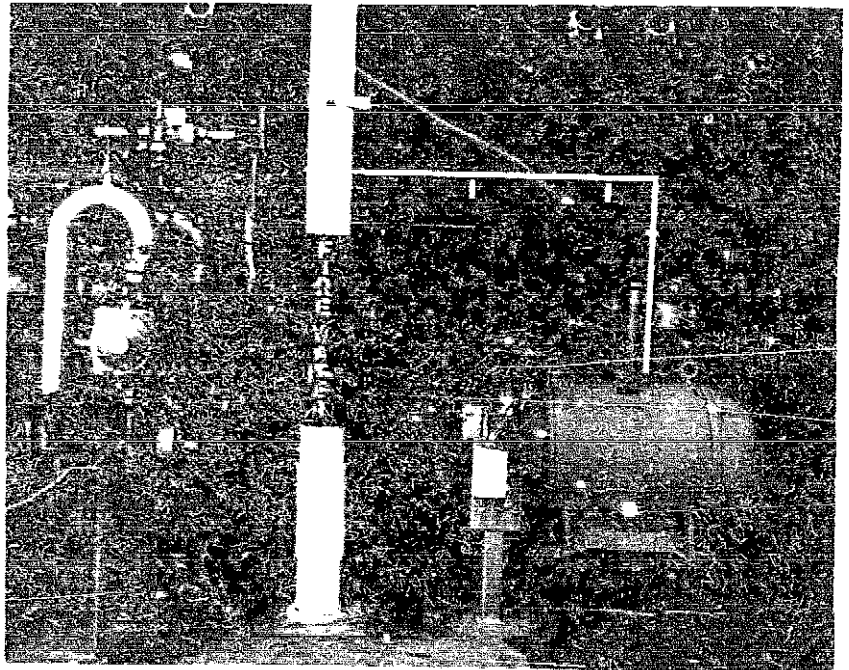




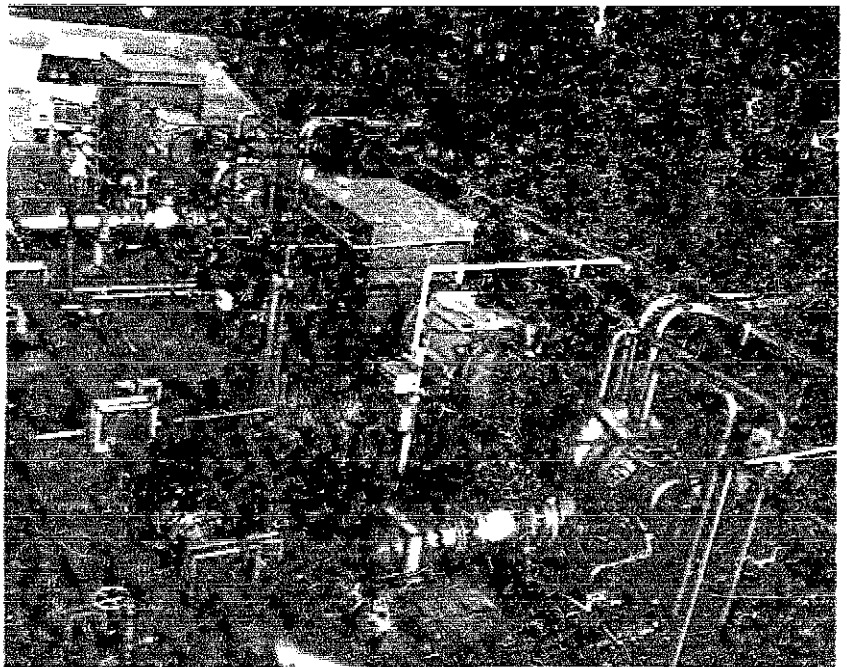
CAMERA No. 27A; located ML2 360-foot level, SE corner;
coverage: Service Arm 8 and primary damper.



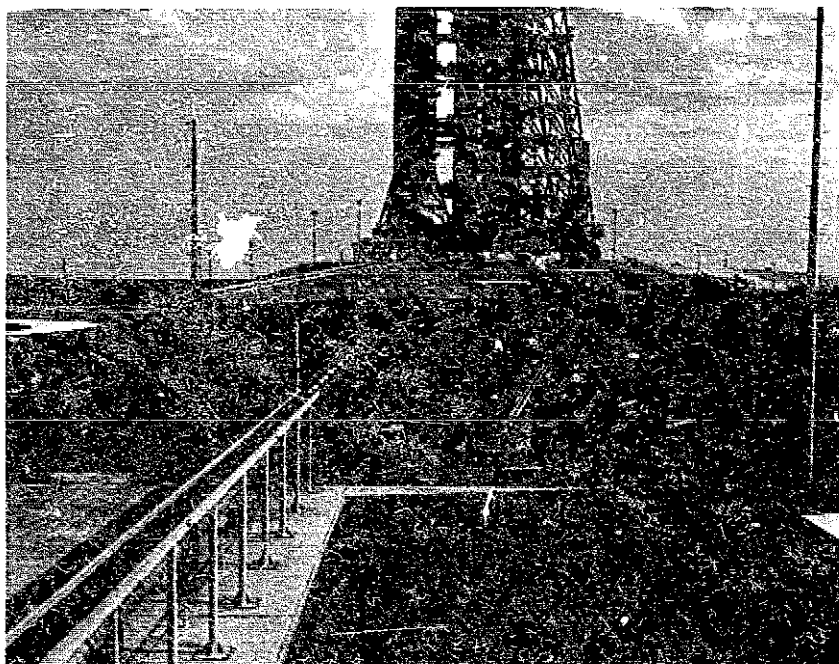
CAMERA No. 28A, located LC39A L02 storage facilities;
coverage: L02 pumps, valves and lines.



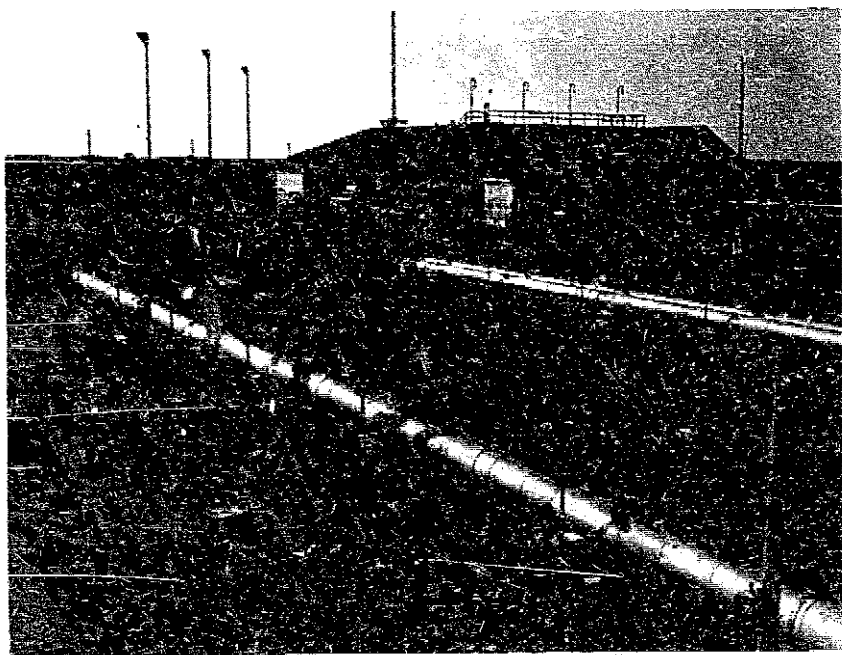
CAMERA No. 28A (Cont'd.); LC2 pumps, valves and lines.



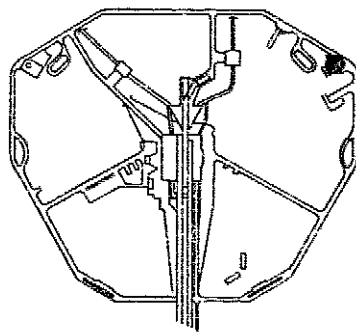
CAMERA No. 29A; located LC39A L02 storage facility;
coverage: L02 pumps, valves and lines.

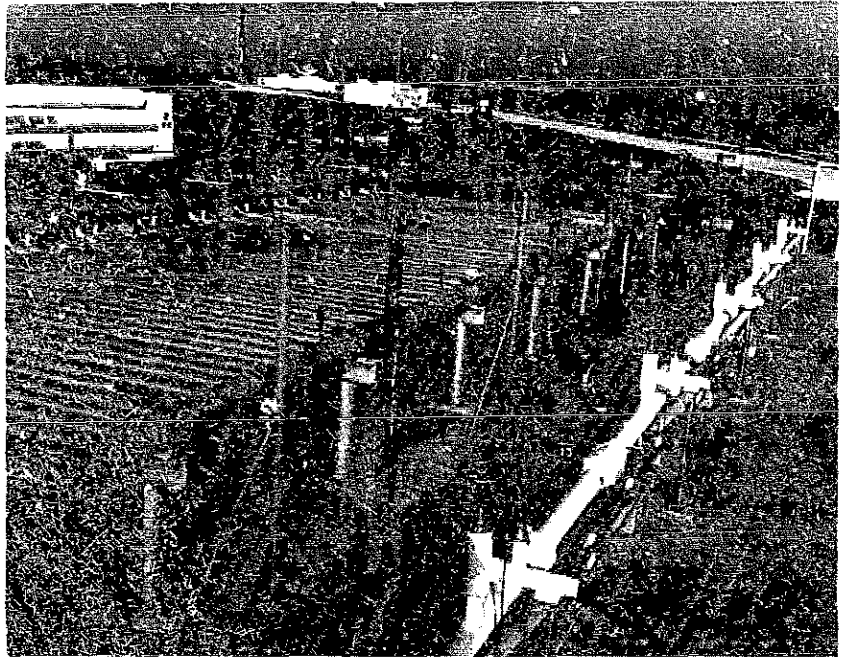


CAMERA No. 29A (Cont'd.); L02 line from L02 storage facility to Pad Apron.



CAMERA No. 30A; located LC39A LH2 storage facility; coverage: LH2 vaporizer.

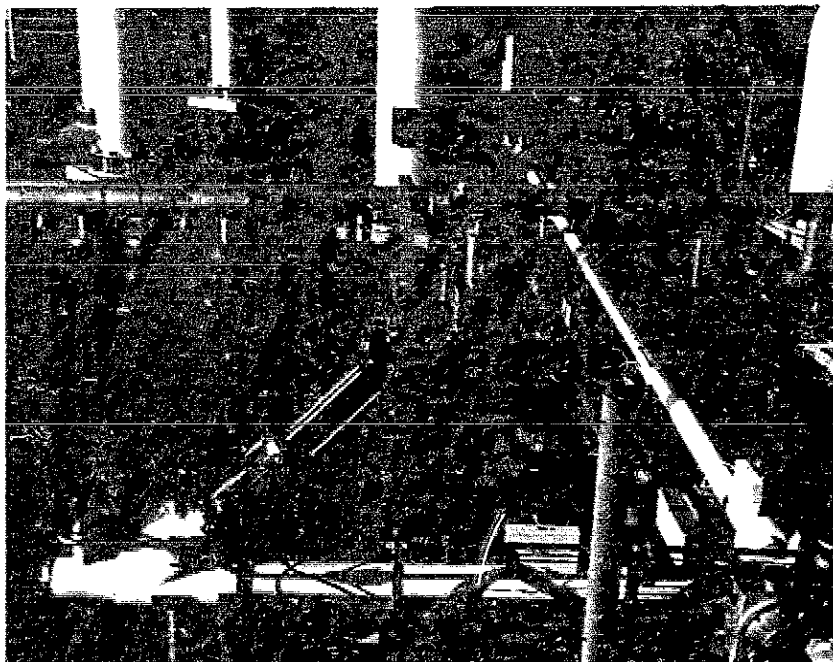




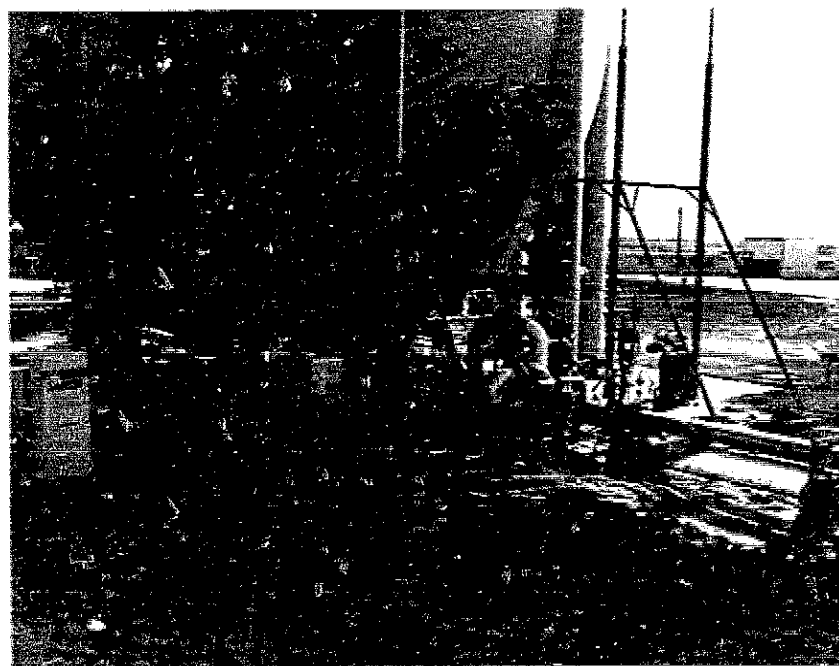
CAMERA No. 30A (Cont'd.); LH2 vaporizer, lines and valves.



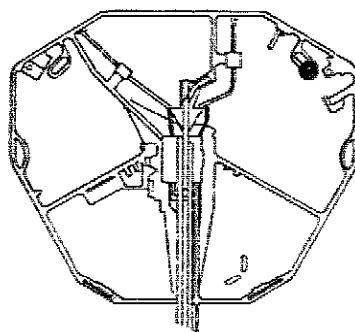
CAMERA No. 30A (Cont'd.); LH2 vaporizer, valves and lines.

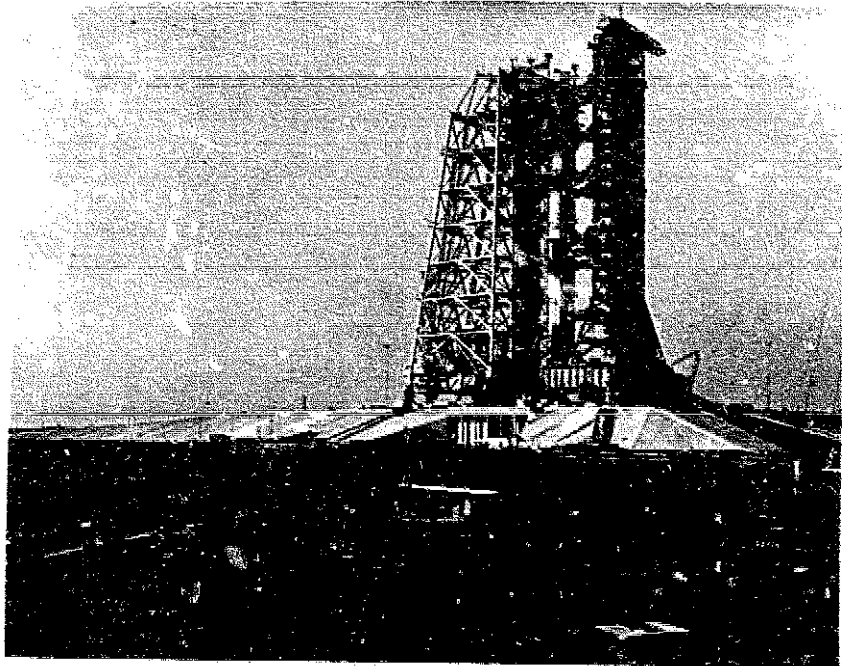


CAMERA No. 30A (Cont'd.); LH2 vaporizer, valves and lines.

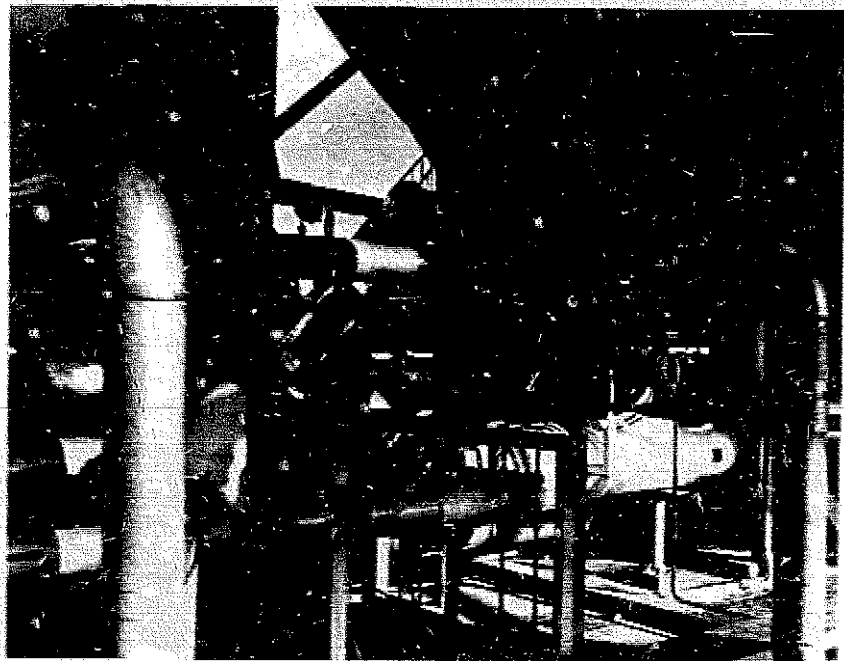
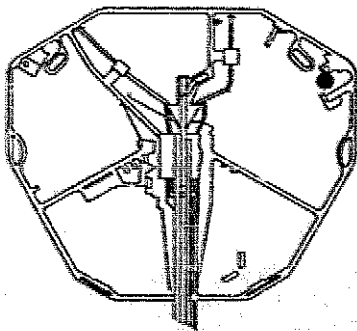


CAMERA No. 31A; located LC39A perimter site I;
coverage: LH2 storage tank, valves and lines.





CAMERA No. 31A; (Cont'd.) LH2 lines to pad apron



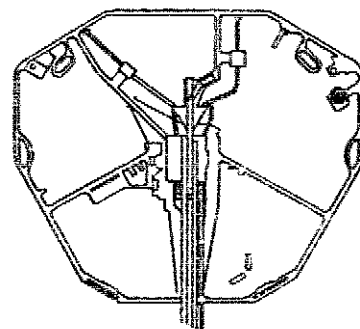
**CAMERA No. 32A; located LC-39A LH2 storage facility;
coverage: (view 32A) LH2 storage tank, valves and lines**

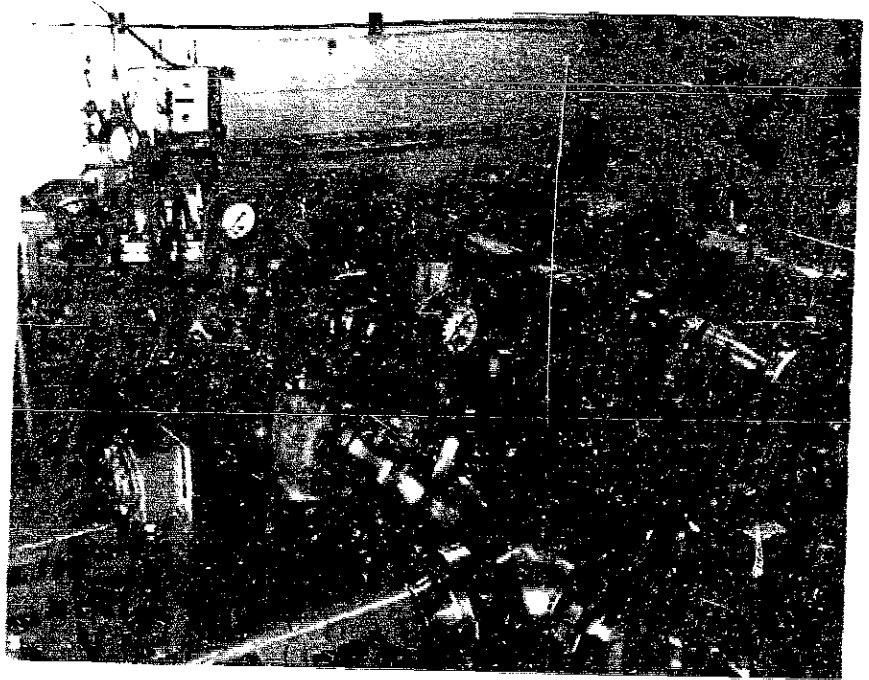


CAMERA No. 32A; (Cont'd.) LH2 valves and lines

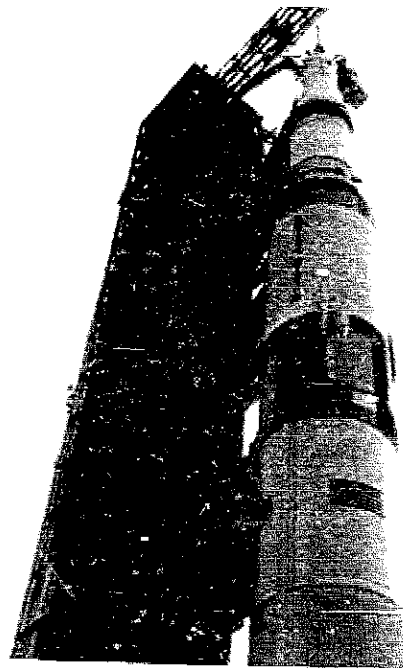
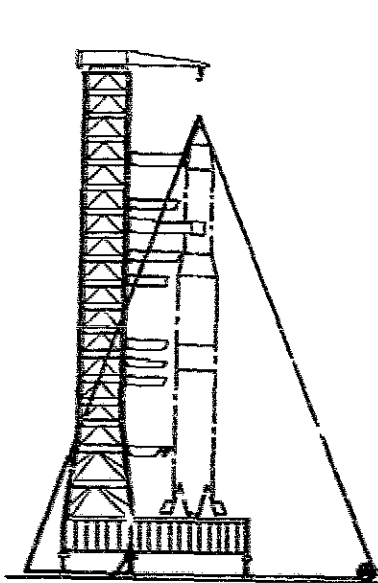


CAMERA No. 33A; located LC-39A RP-1 storage facility;
coverage: RP-1 pump

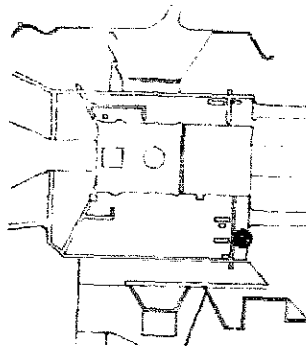
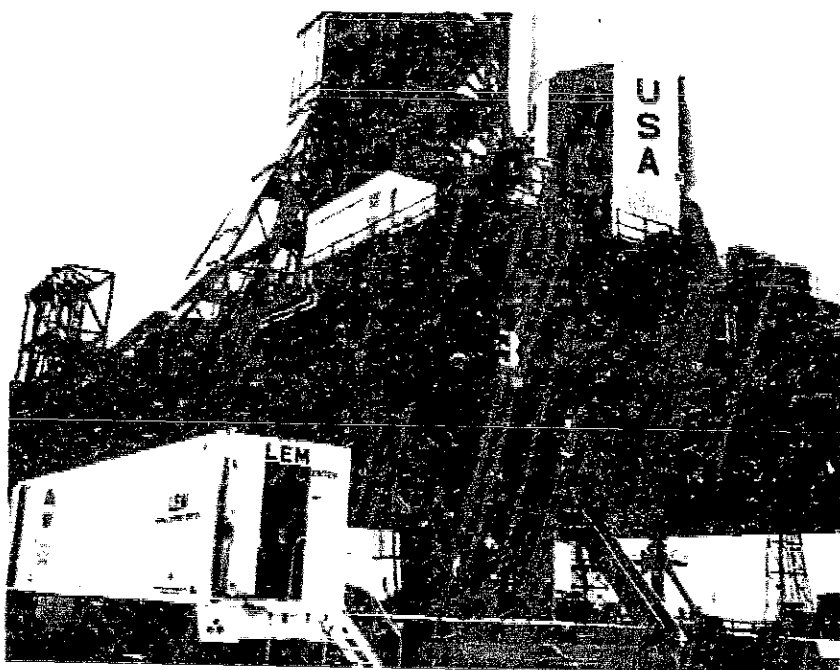




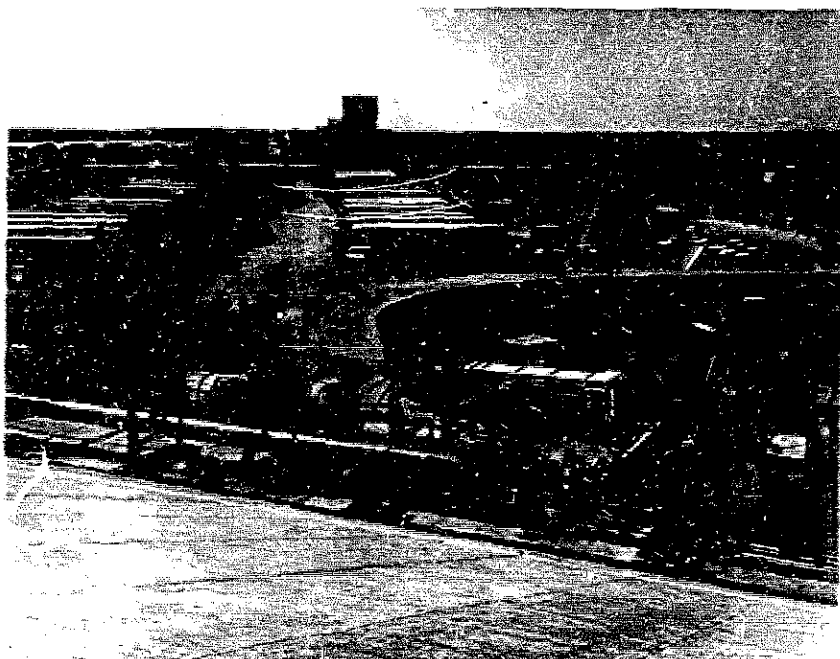
CAMERA No. 33A (Cont'd.); RP-1 pumps, valves and lines.



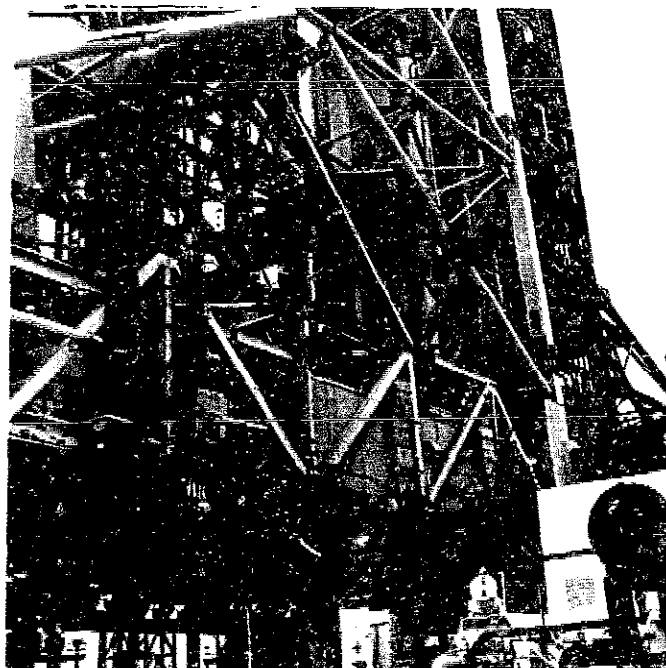
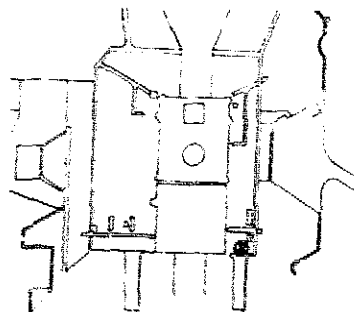
CAMERA No. 34A; located LC39A SW' corner pad apron; coverage: Space vehicle and water riser to ML 320-foot level.



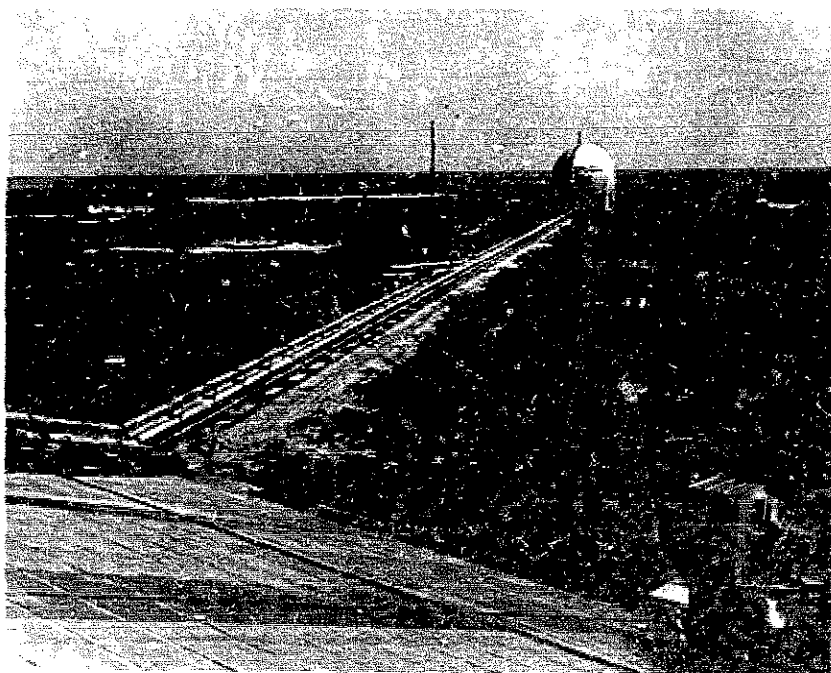
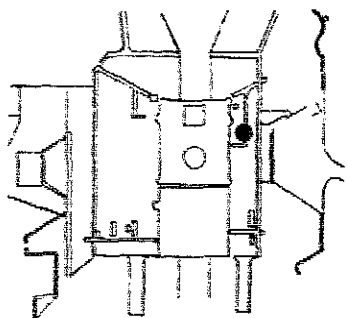
Camera No. 34A (Cont'd.); Space vehicle.



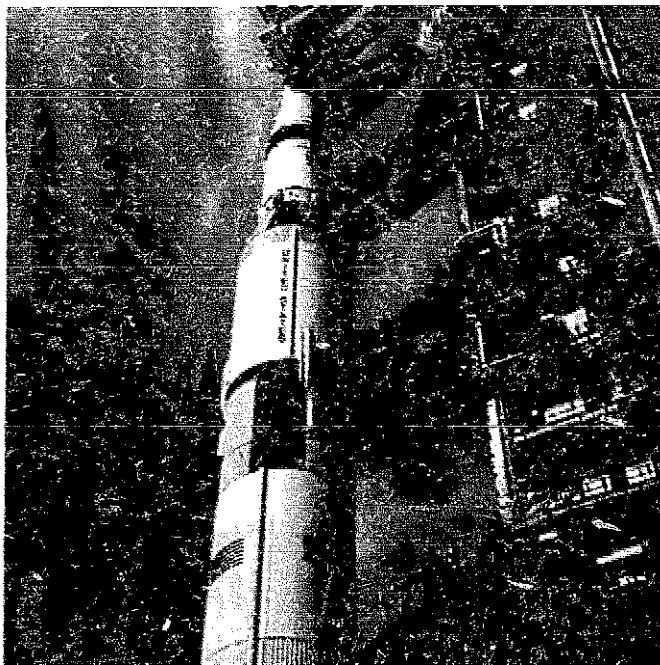
CAMERA No. 34A (Cont'd.); Industrial water pit area.



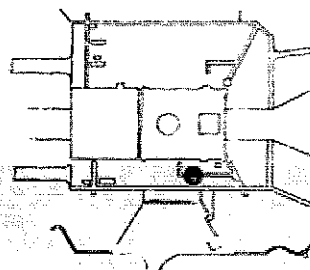
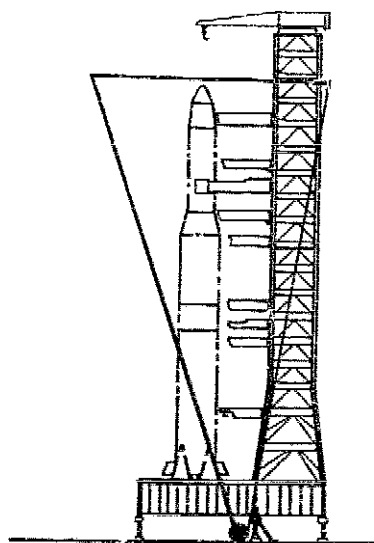
CAMERA No. 35A; located SE corner pad apron;
coverage: space vehicle and ML including side 1
of umbilical tower.



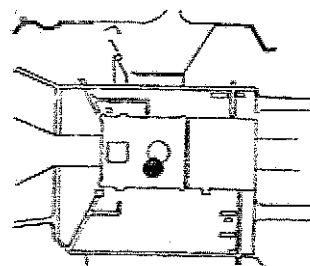
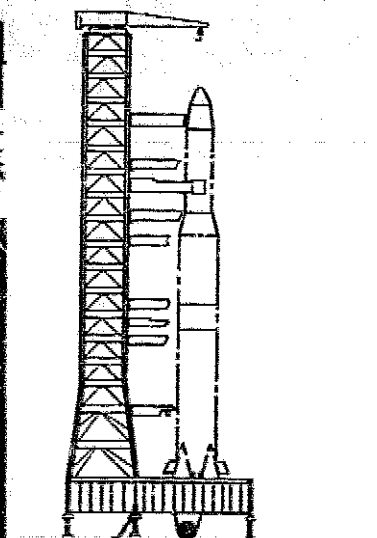
CAMERA No. 36A; located LC39A center, east side of pad
apron; coverage: LH2 lines and storage tank.

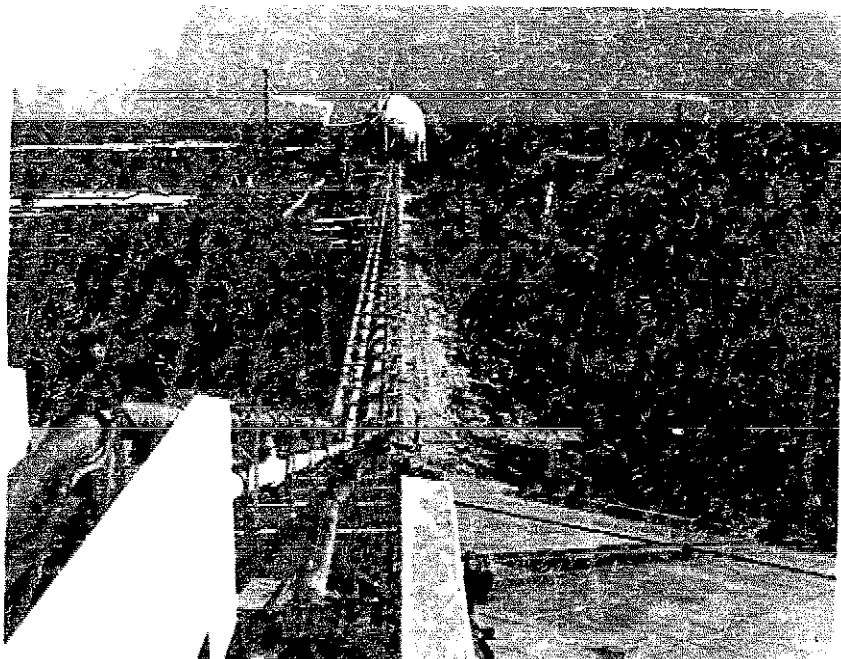
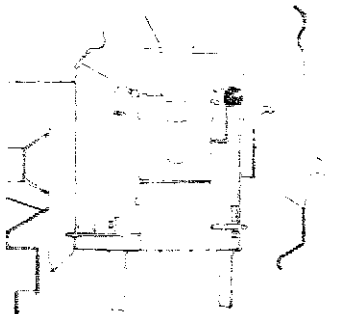


CAMERA No. 36A (Cont'd.); space vehicle and ML side 4.

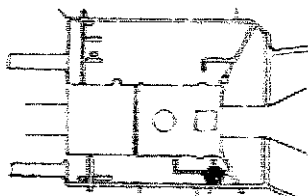
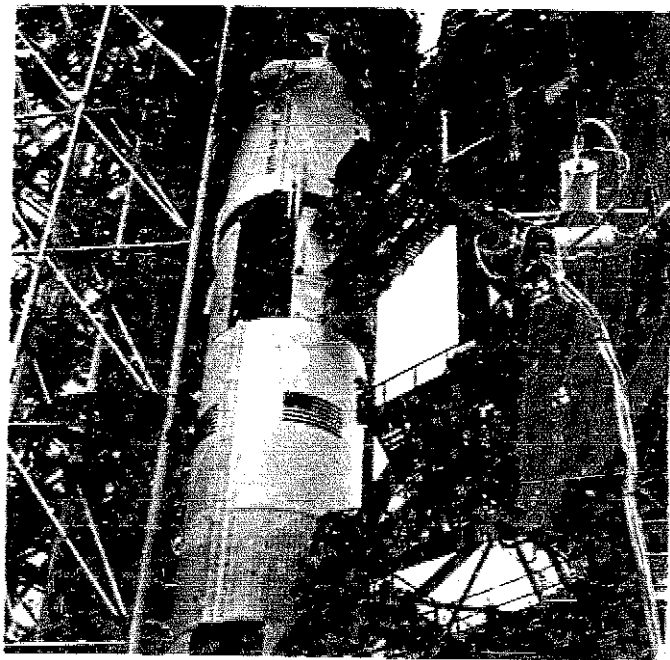
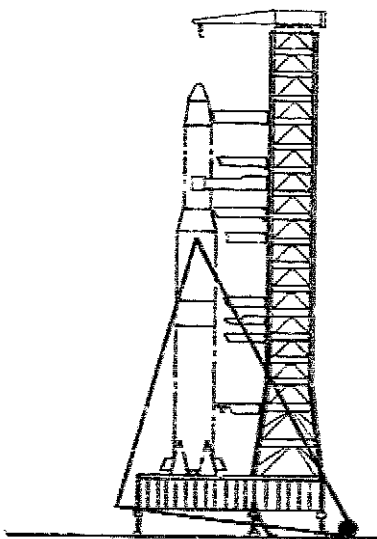


CAMERA No. 37A; located LC39A west side of flame trench; coverage: bottom of SI-C thrust structure and engine thrust chambers.

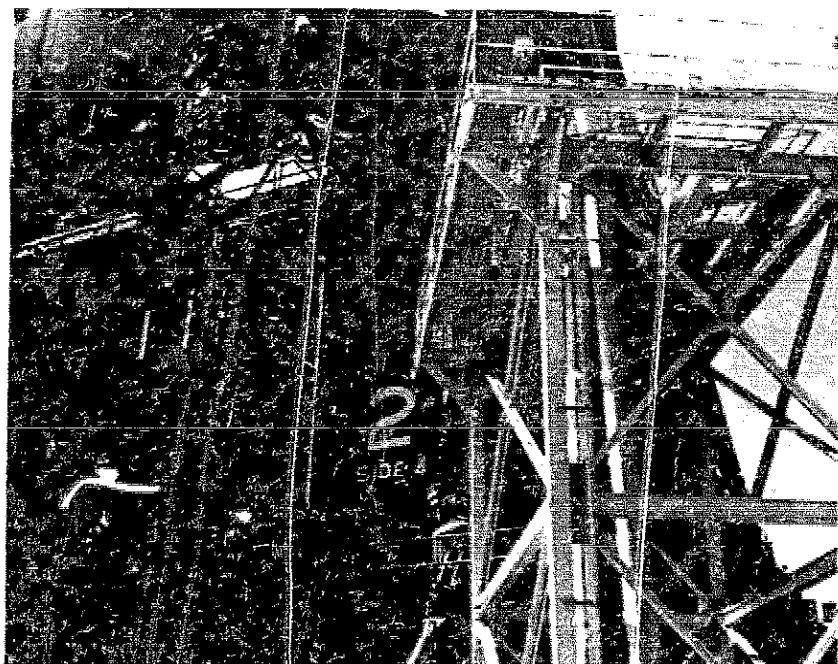




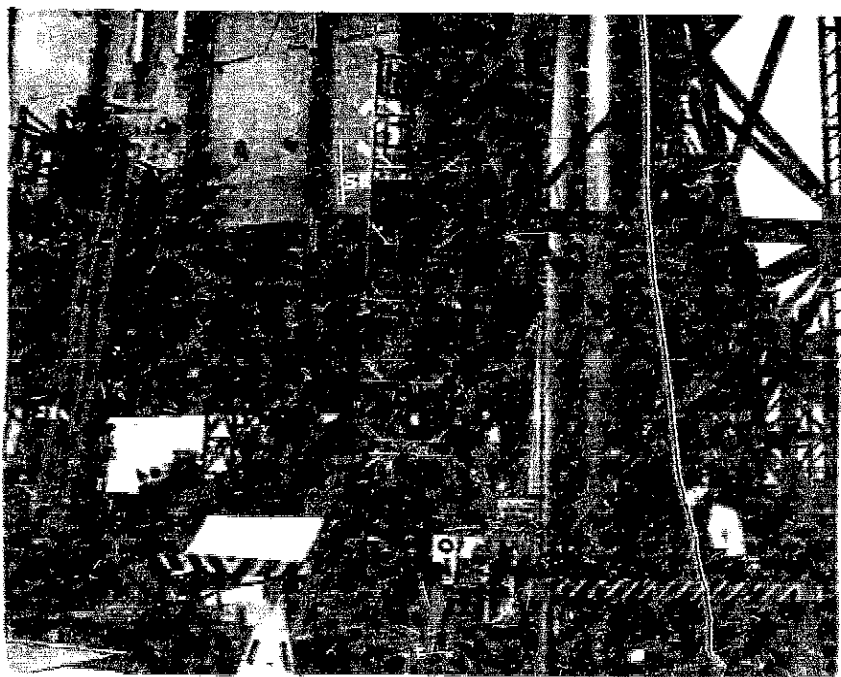
CAMERA No. 38A; located LC39A NE corner of pad apron;
coverage: LH2 lines and storage tank.



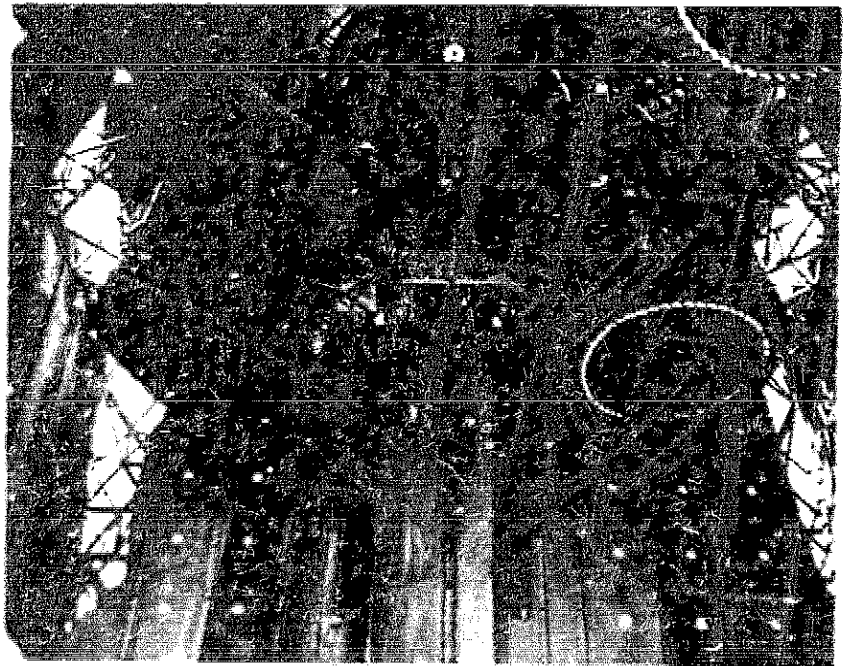
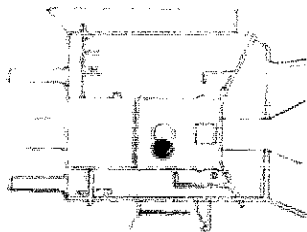
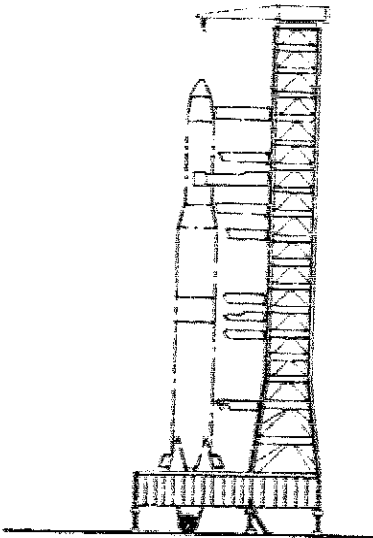
CAMERA No. 38A (Cont'd.); LH2 expansion joints, ML side
4 and space vehicle.



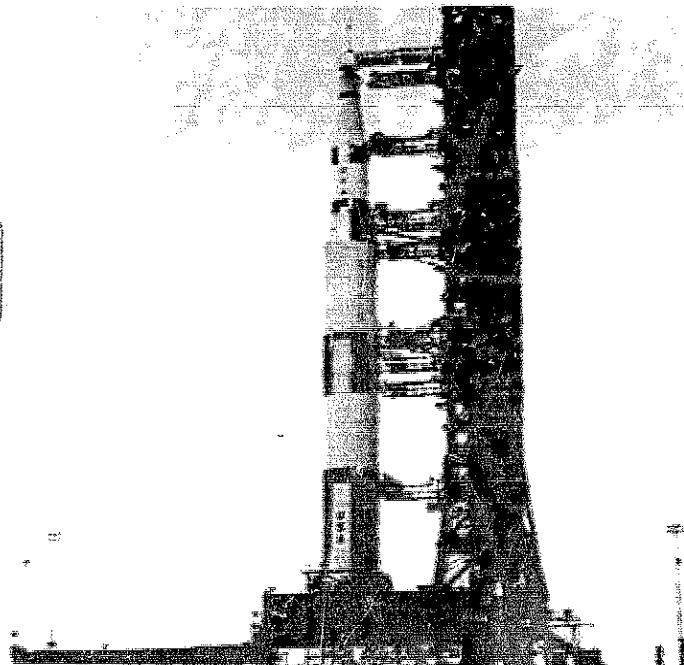
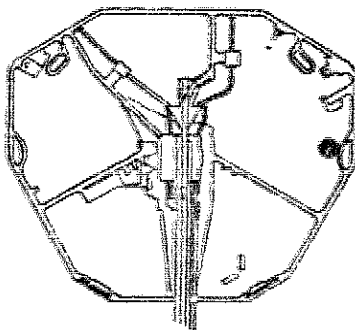
CAMERA No. 38A (Cont'd.); LH2 disconnect tower piping and ML connection.



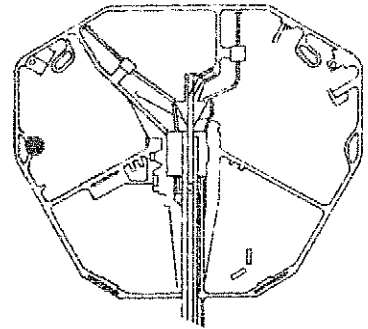
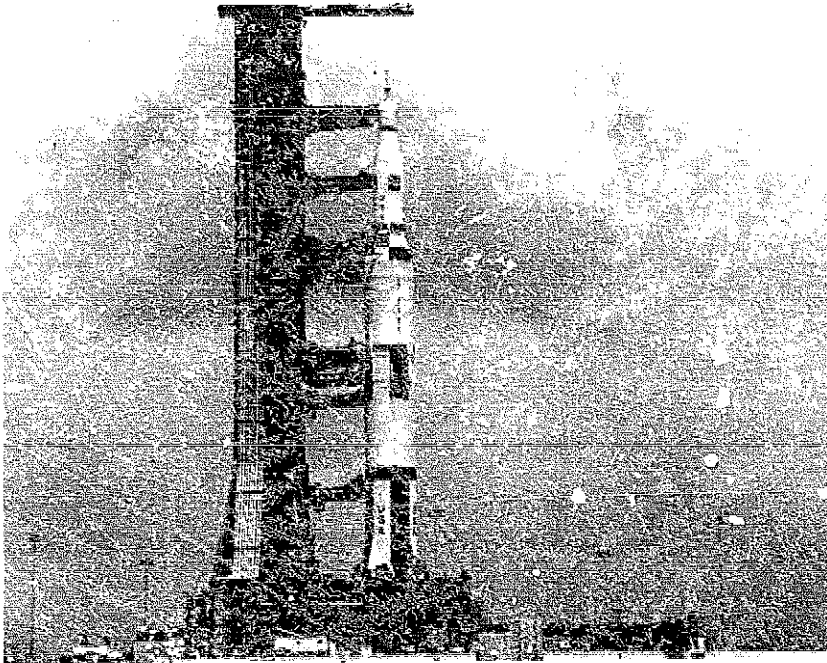
CAMERA No. 38A (Cont'd.); pad apron at ground level, east side.



CAMERA No. 39A; located LC39A east side of flame trench; coverage: L02 F-1 overboard drain.

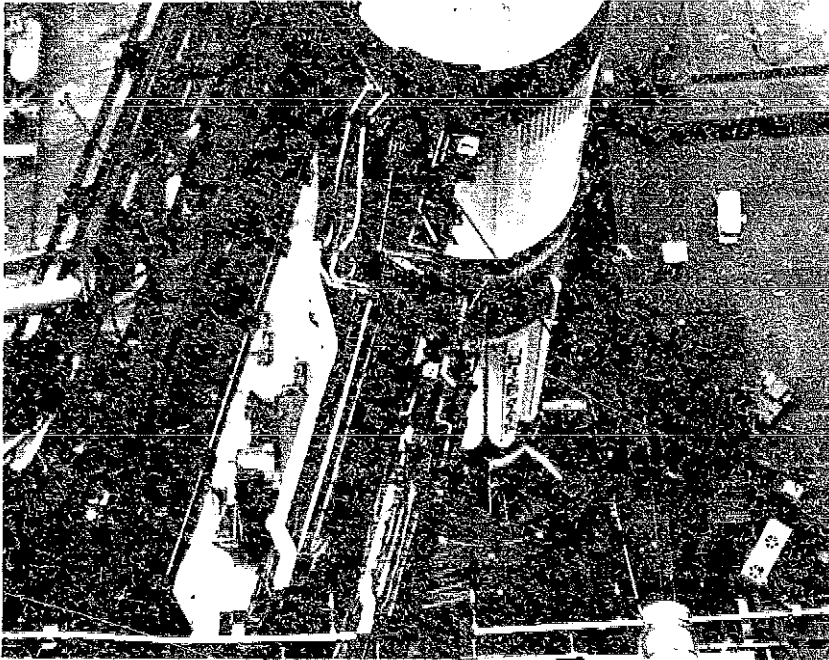


CAMERA No. 41A; located LC39A on photographic tracking mount at perimeter site 2; coverage: space vehicle during first 1,300 feet of flight (special bore-sight camera).

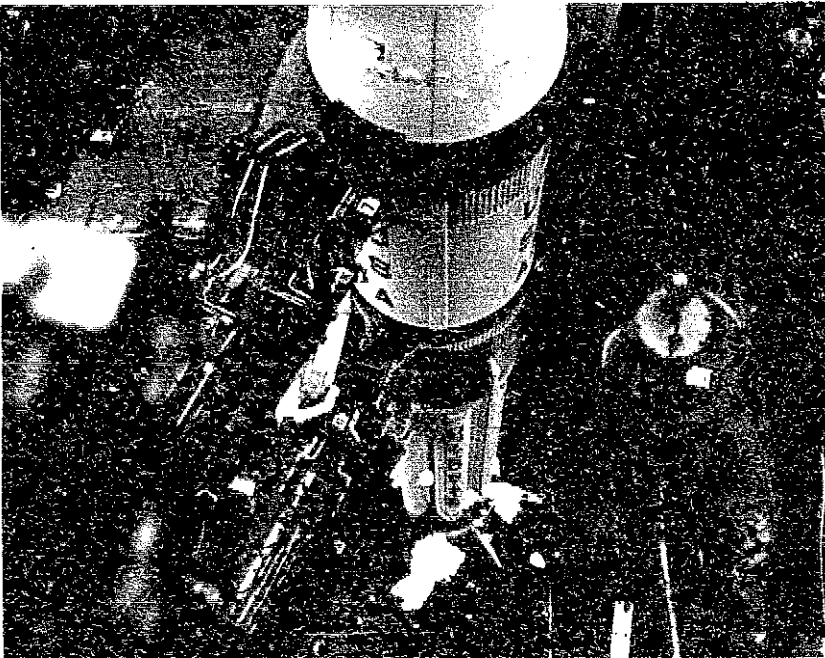
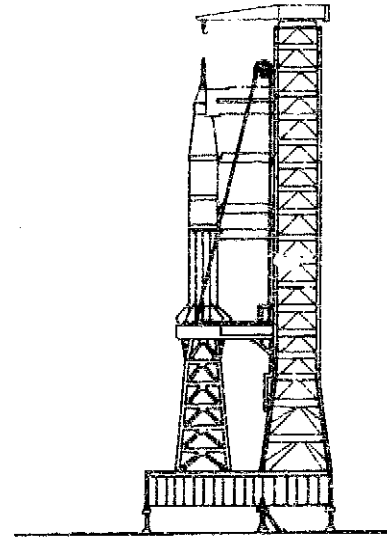
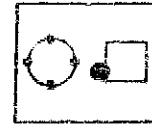


CAMERA No. 42A; located LC39A on photographic tracking mount at perimeter site 5; coverage; space vehicle during first 1,300 feet of flight (special bore-sight camera).

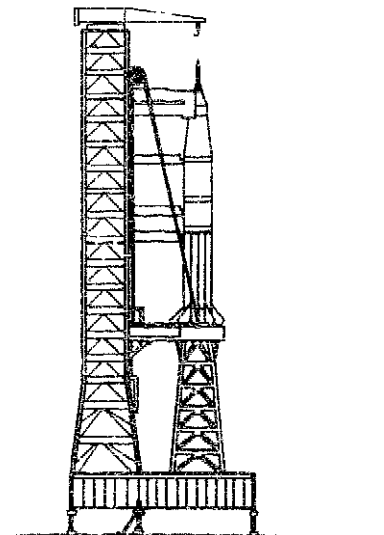
SATURN 1B SECTION
SKYLAB 2, 3, 4, R
AND
APOLLO SOYUZ TEST PROJECT

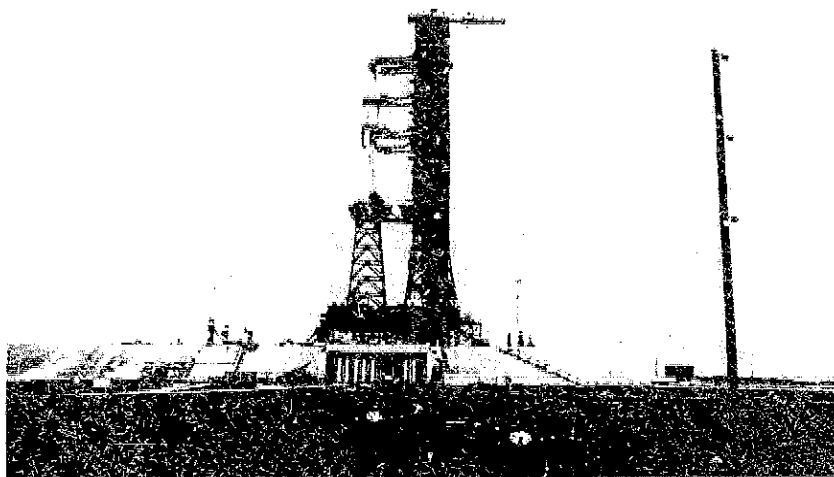
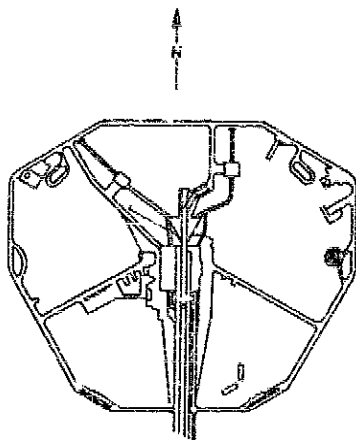


CAMERA No. AAS-1; located MLI 330-foot level, south side, looking downward; coverage: space vehicle and service arms.

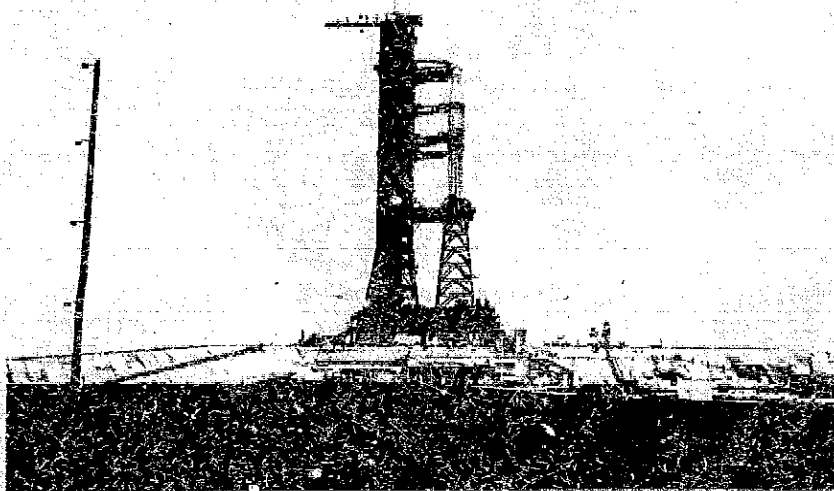
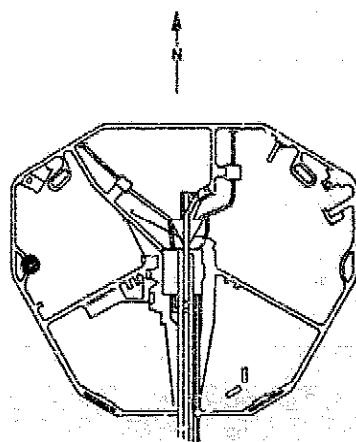


CAMERA No. AAS-2; located MLI 330-foot level, south side, looking downward; coverage: space vehicle and service arms.

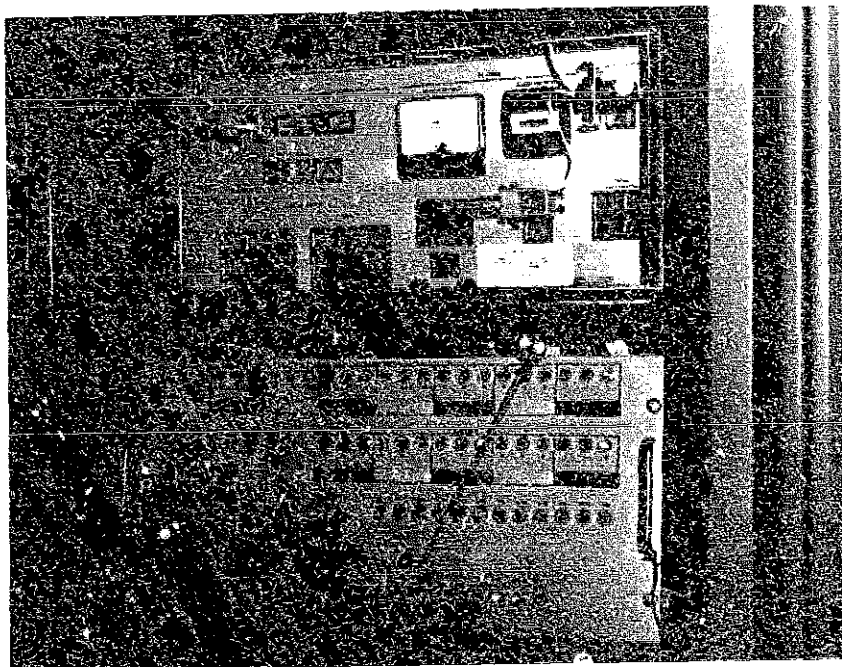




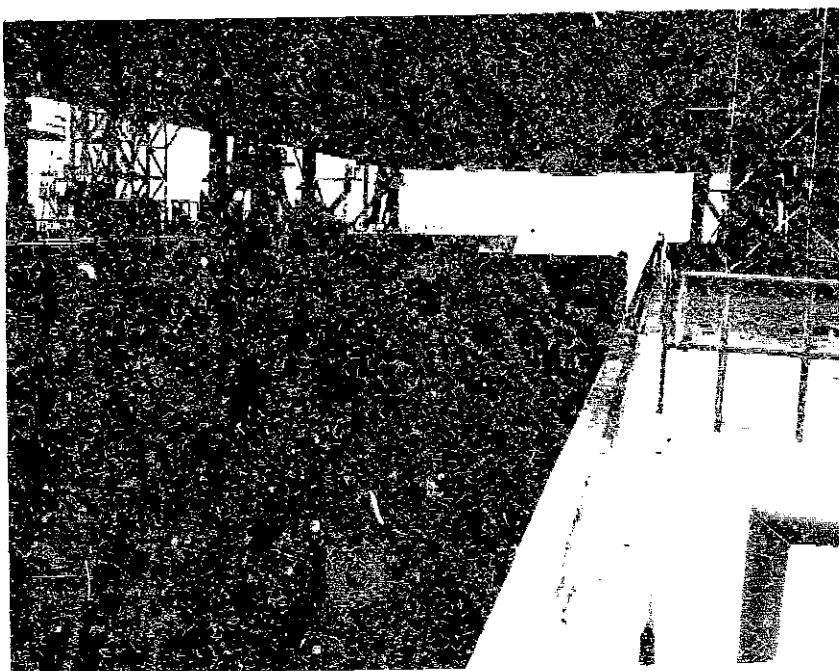
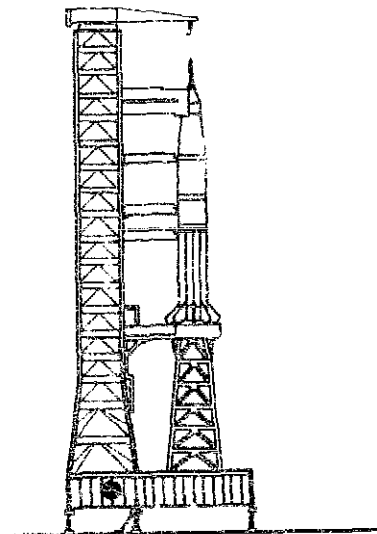
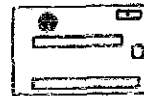
CAMERA No. AAS-3; located LC39B perimeter site 2;
coverage: overall view of space vehicle and showing clearance
during vertical motion.



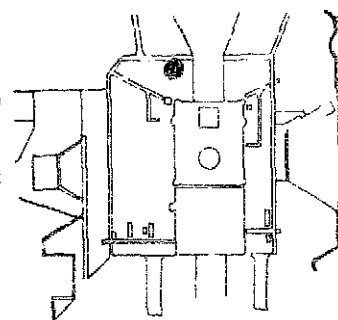
CAMERA No. AAS-4; located LC39B perimeter site 5;
coverage: overall view of space vehicle and showing clearance
during vertical motion.

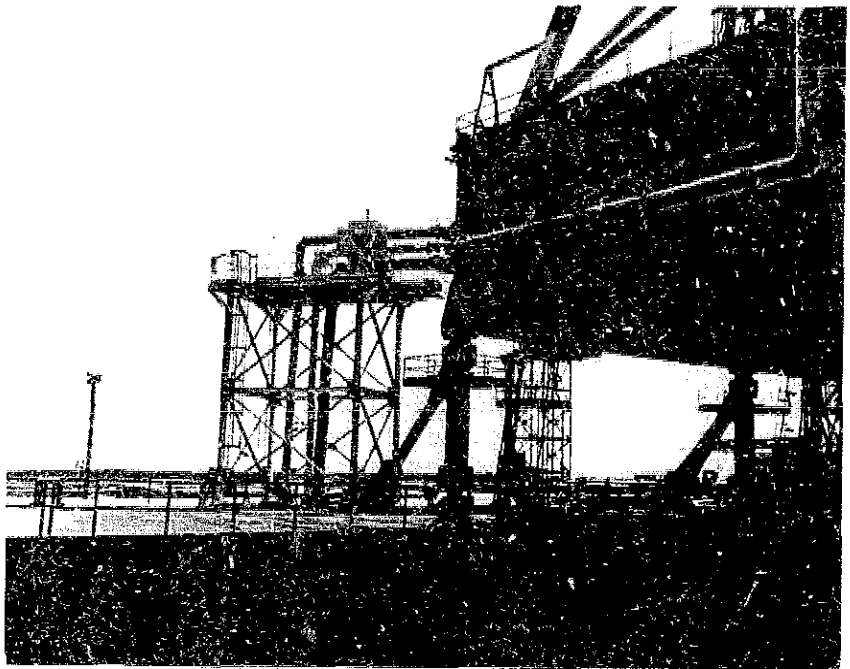


CAMERA No. 2B; located MLI Rm. 15A, coverage: RCA-110 computer maintenance panel.

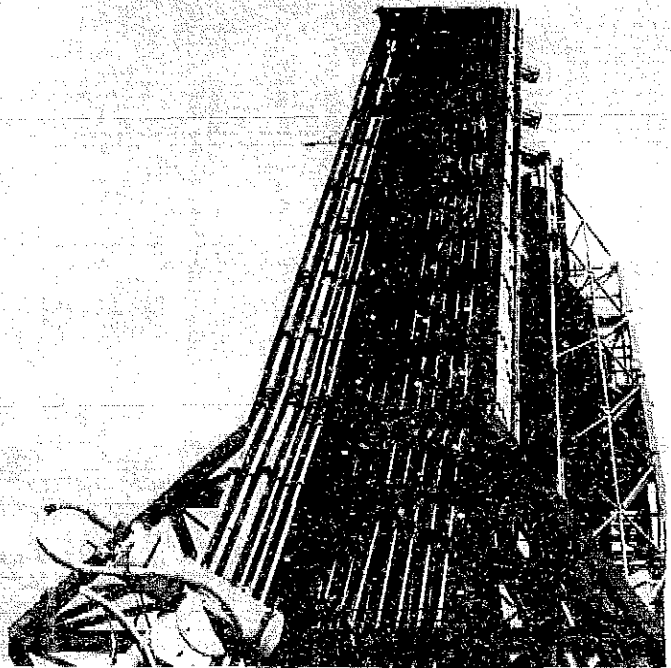


CAMERA No. 3B; located LC39A pad apron at NW corner of flame trench; coverage: (view 3A) flame deflector cooling water.

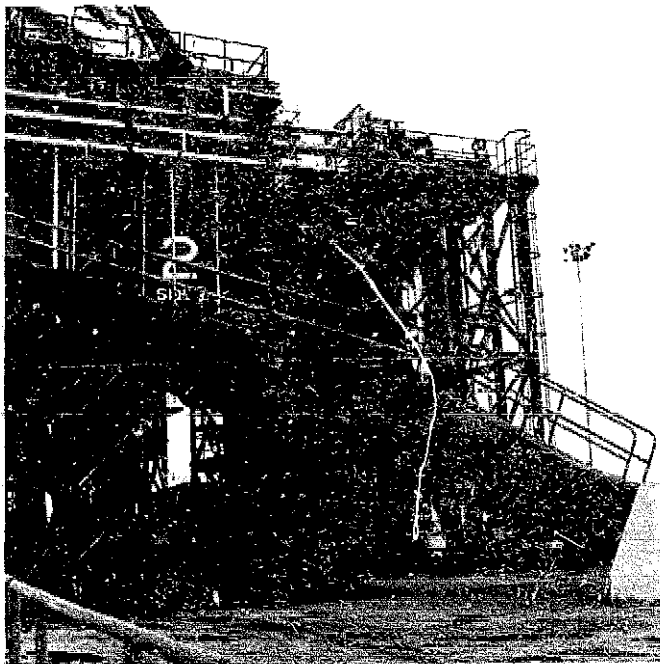




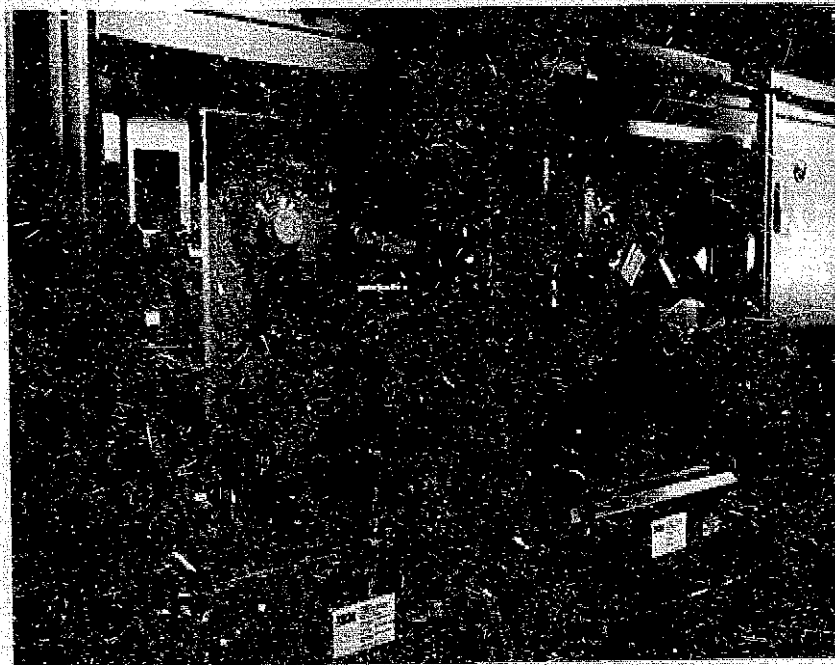
CAMERA No. 3B (Cont'd.); LH2 disconnect tower piping and ML connection.



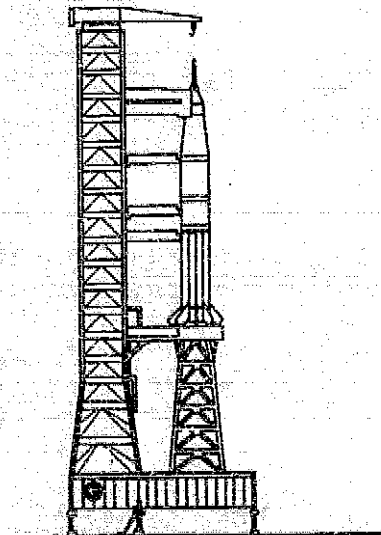
CAMERA No. 3B (Cont'd.); LH2 vent piping, ML side 3.

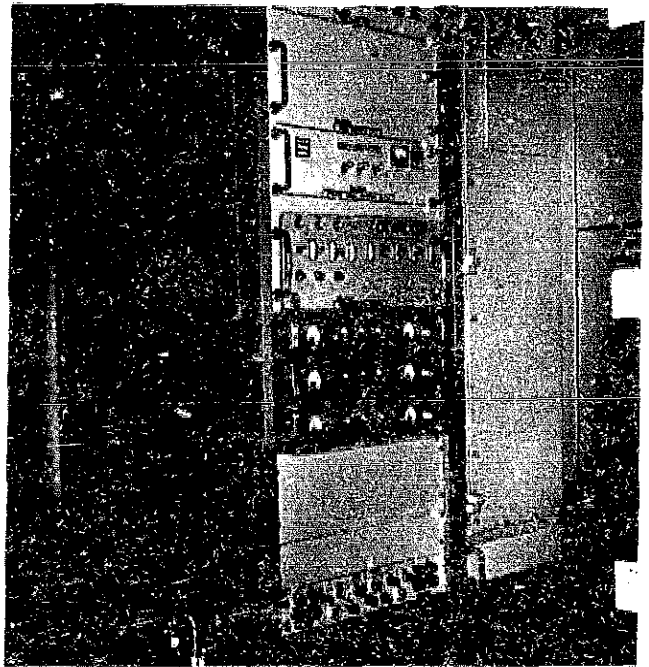


CAMERA No. 3B; (view 3D) LOX disconnect tower piping and ML connection.

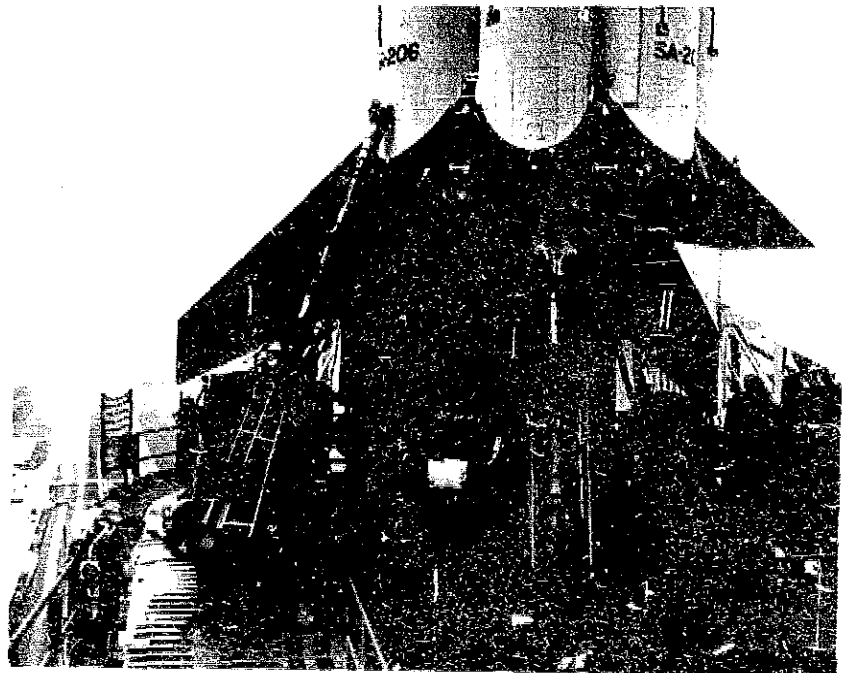
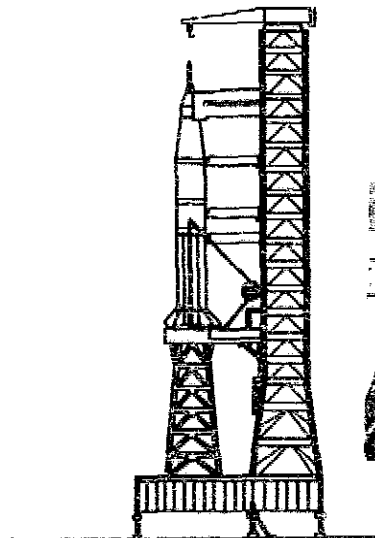


CAMERA No. 4B; located MLI Rm. 15A; coverage: (view 4A) RCA 110 computer astrionics equipment.

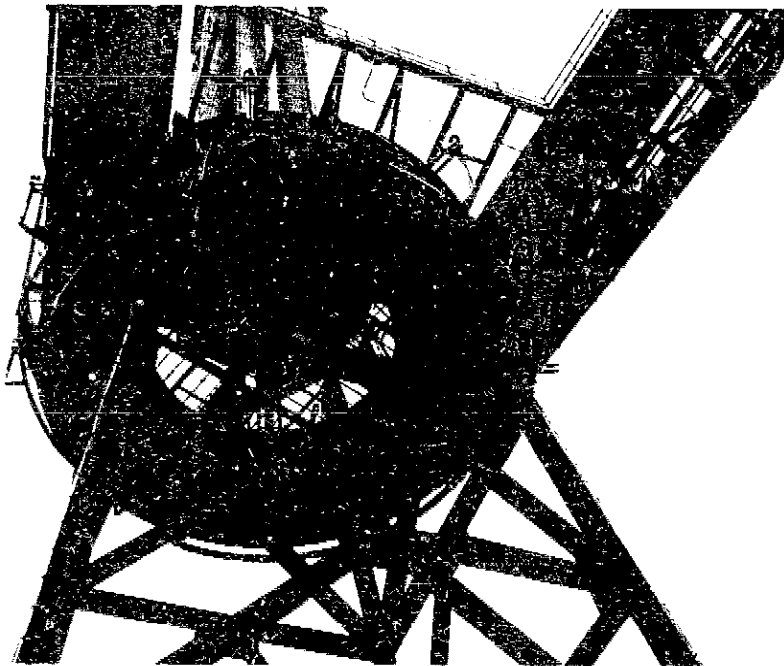




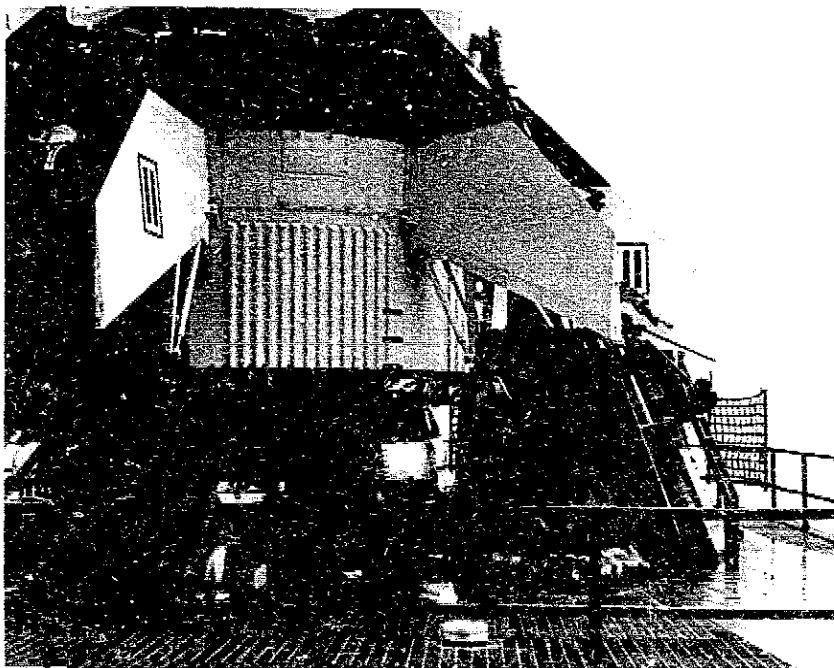
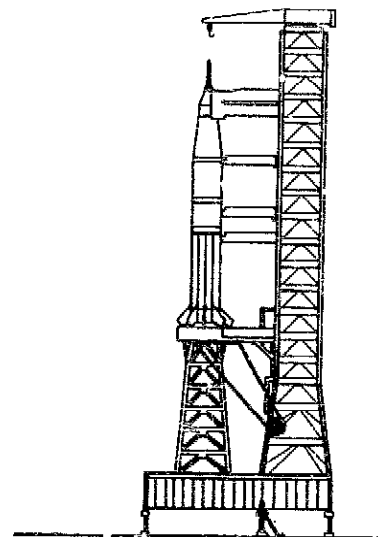
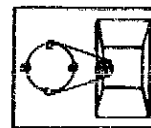
CAMERA No. 4B (Cont'd.); discrete equipment.



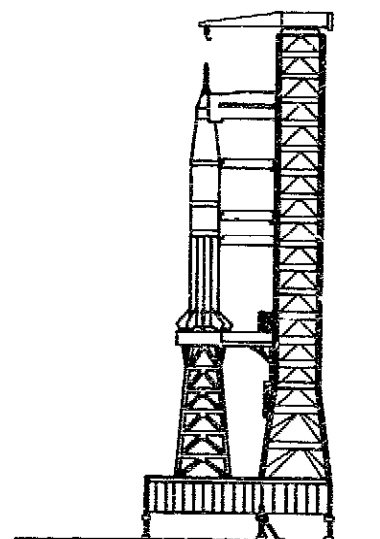
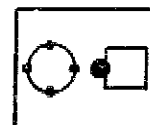
CAMERA No. 9B; located MLI 160-foot level, SE corner; coverage: SIB overall, RPI fuel mast, pedestal deck quench and emergency egress activities.

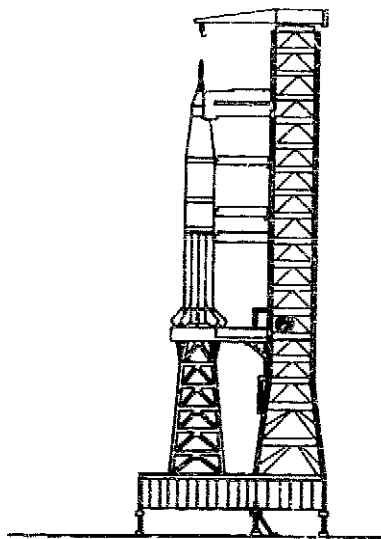
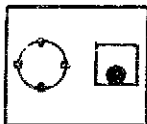


CAMERA No. 10B; located MLI 30-foot level, side I;
coverage: SIB engines and engine service platform.

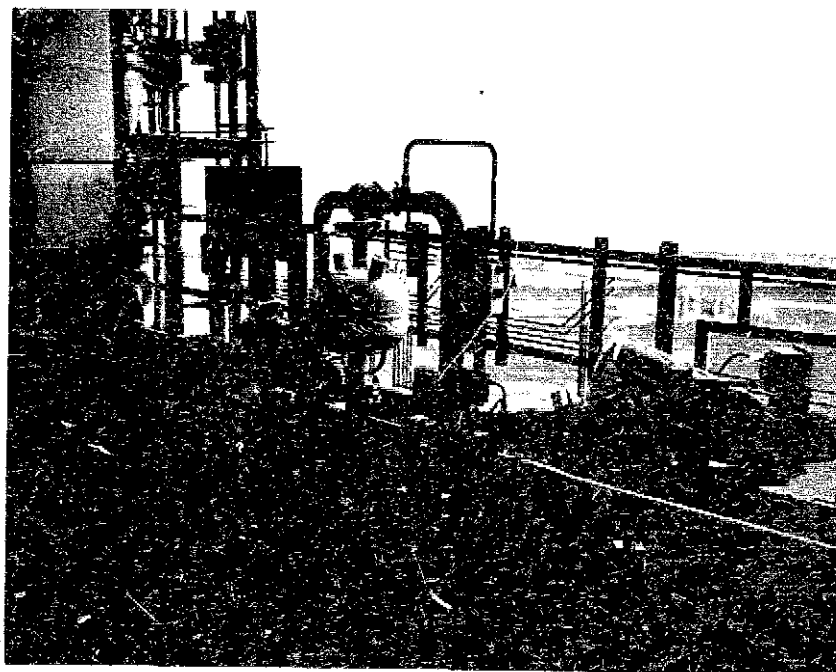
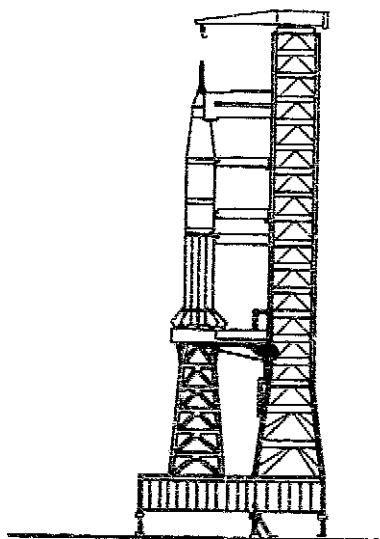


CAMERA No. 13B; located MLI 127-foot level, north side;
coverage: Pedestal deck and SI-B exit plane.

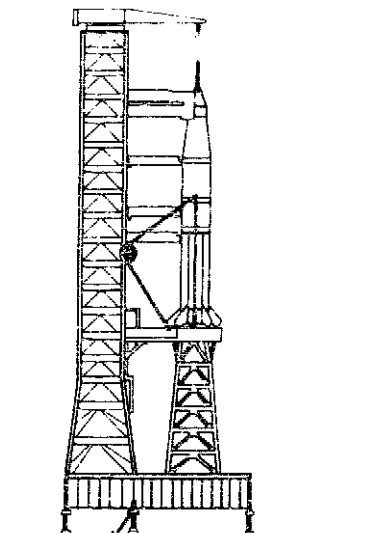
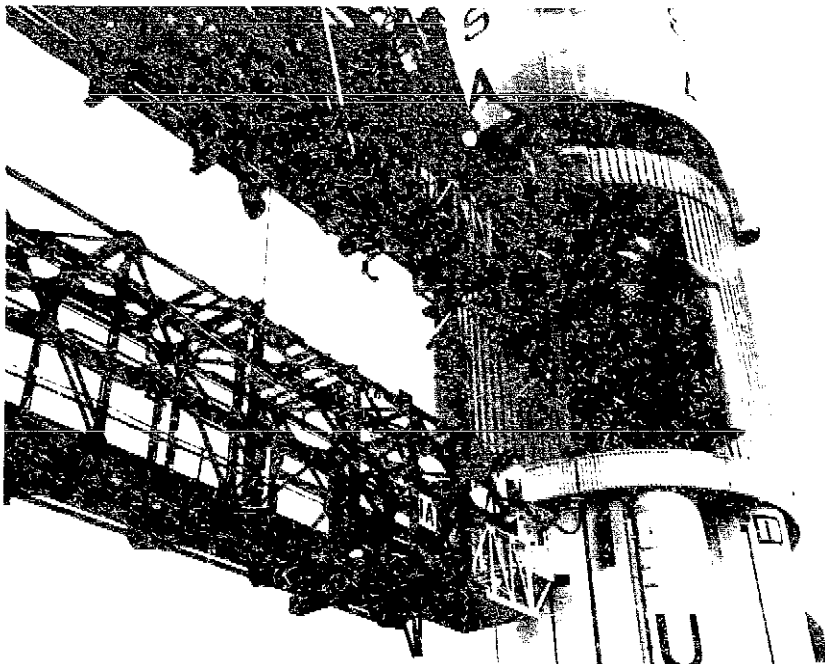




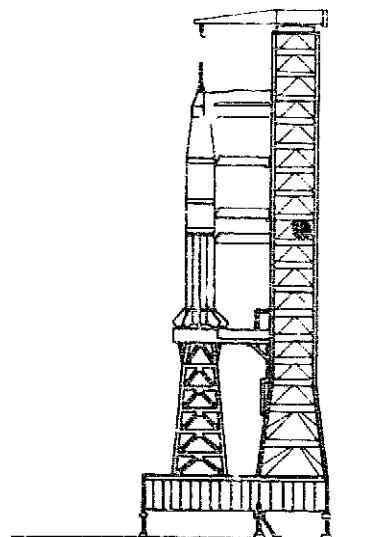
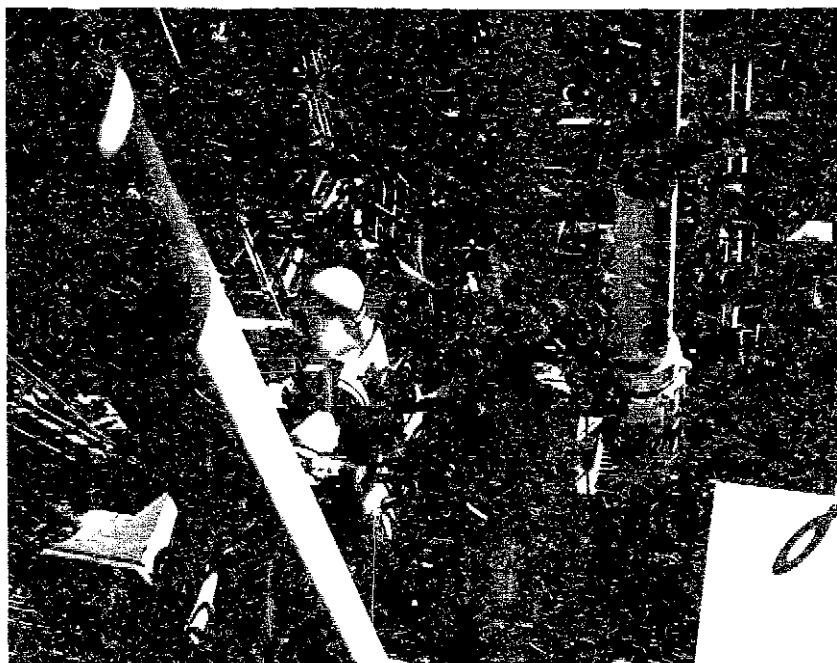
CAMERA No. 14B; located ML 120-foot level, east side; coverage: LOX valve complex, IWS fogging system and general area view.



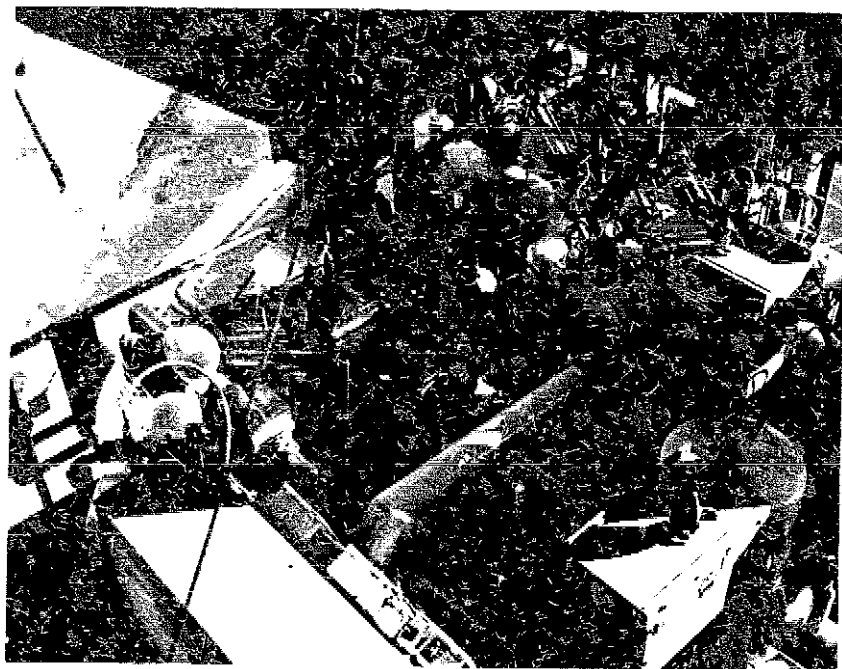
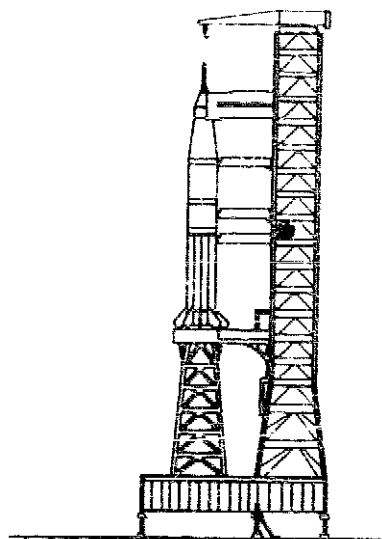
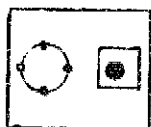
CAMERA No. 15B; located MLI, 100-foot level, south side, coverage: SIB RPI valve complex.



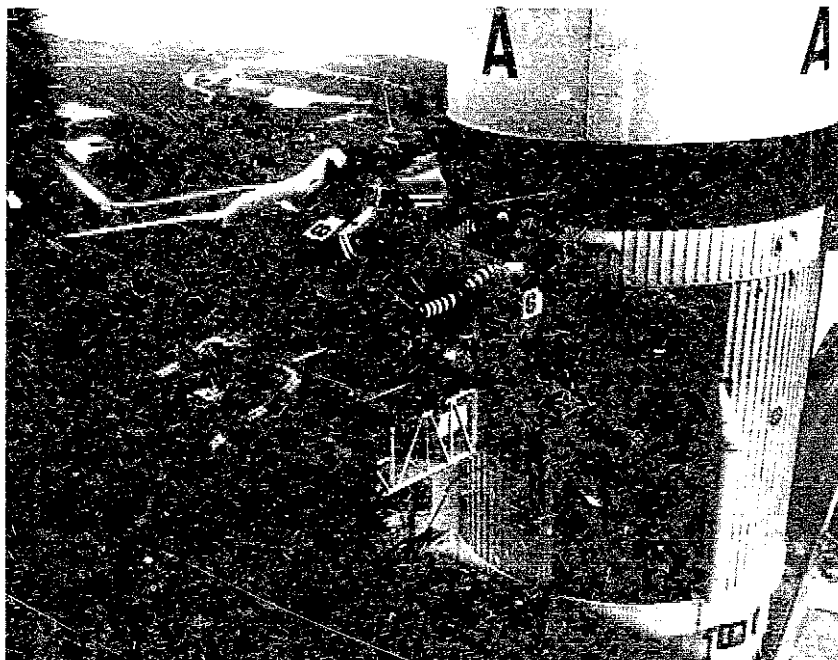
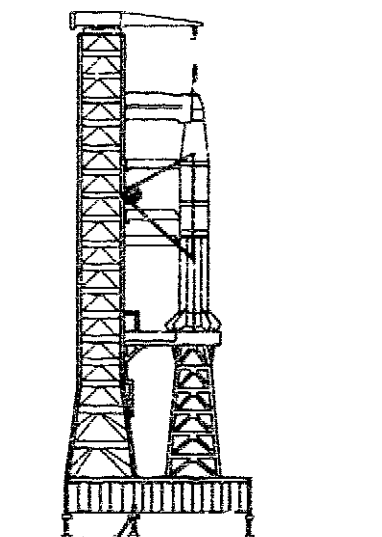
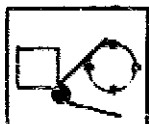
CAMERA No. 16B; located MLI 180-foot level, SW corner;
coverage: service arms 1A and 6, emergency egress
activities 127' level deck and LOX service mast.



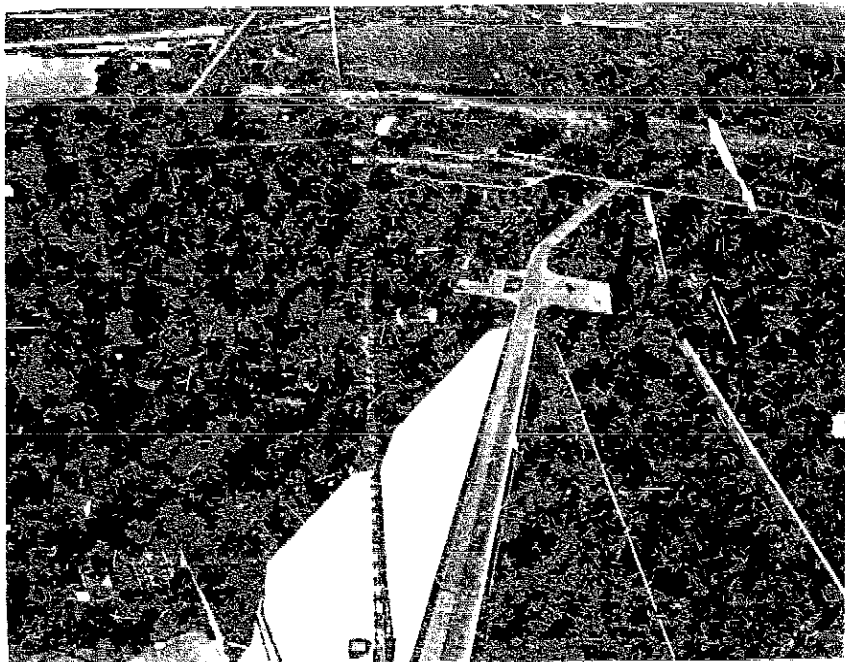
CAMERA No. 18B; located MLI 200-foot level, north side;
coverage: LH2 valve complex.



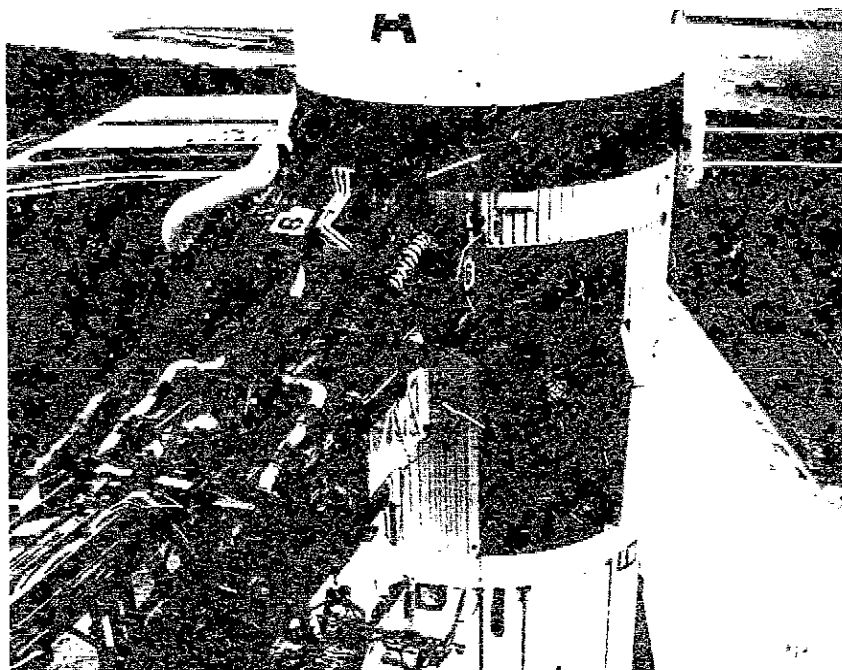
CAMERA No. 19B; located MLI 200-foot level, east side; coverage: LOX valve complex.



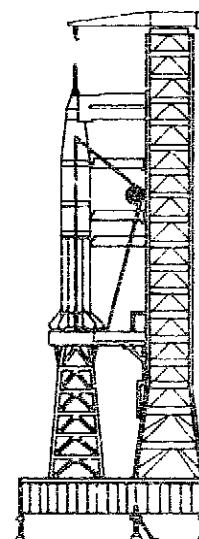
CAMERA No. 21B; located MLI 240-foot level, SW corner; coverage: SIV-B service arm 6, APS module and LH2 umbilical.

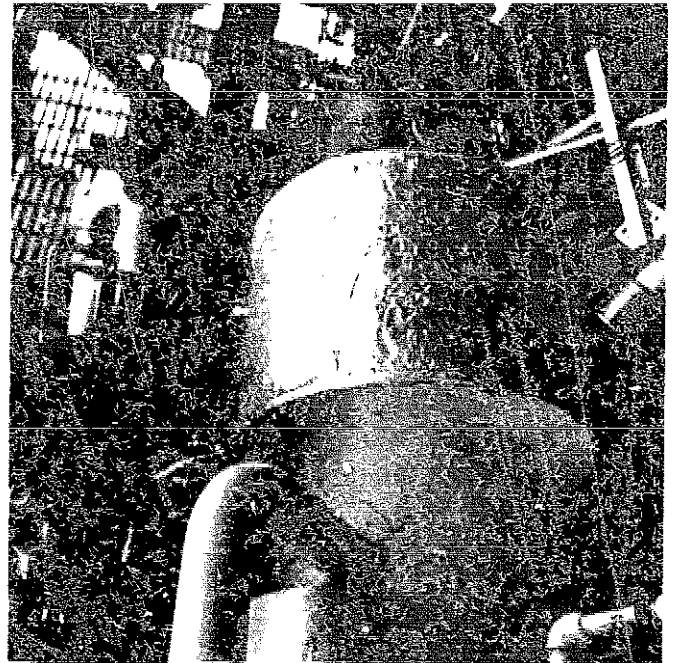
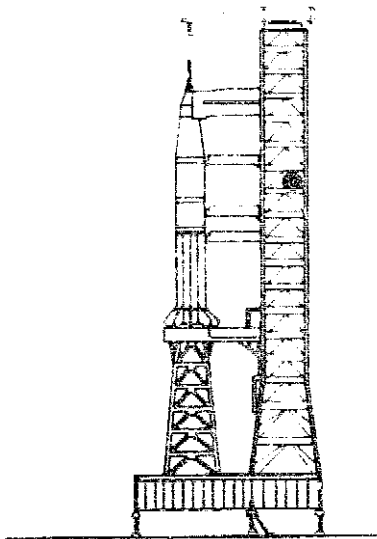


CAMERA No. 21B (Cont'd.); facilities inside of pad perimeter west of pad apron.

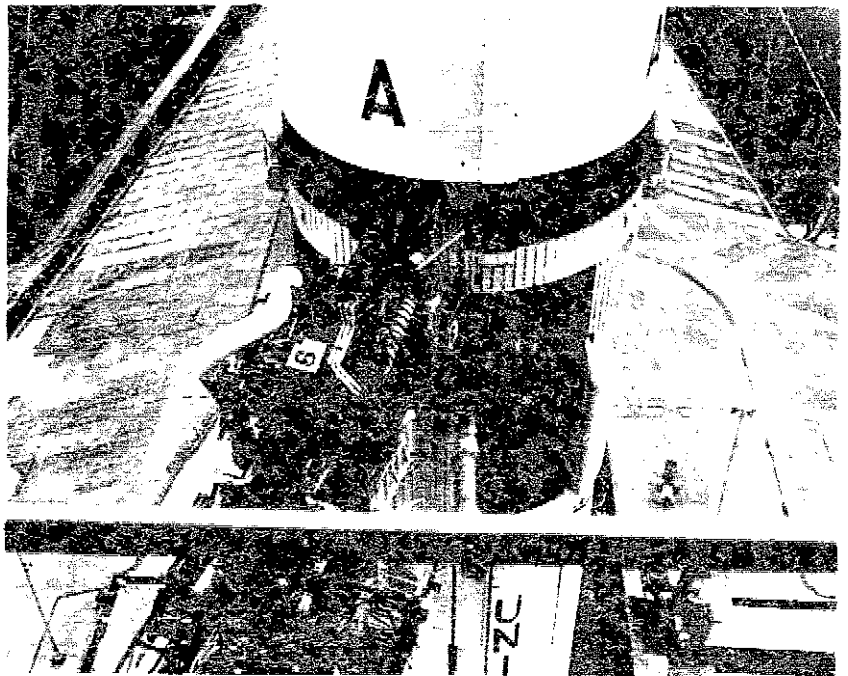
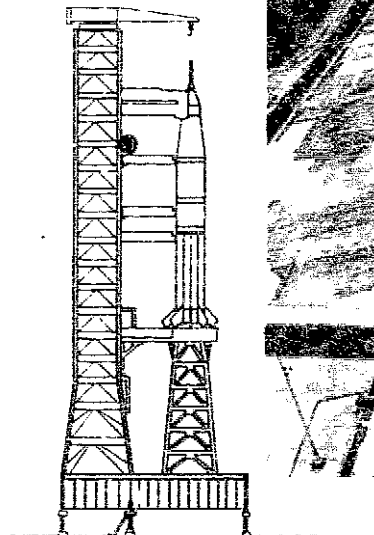


CAMERA No. 22B; located MLI 240-foot level, south side; coverage: service arm 5, SIV-B and APS module.

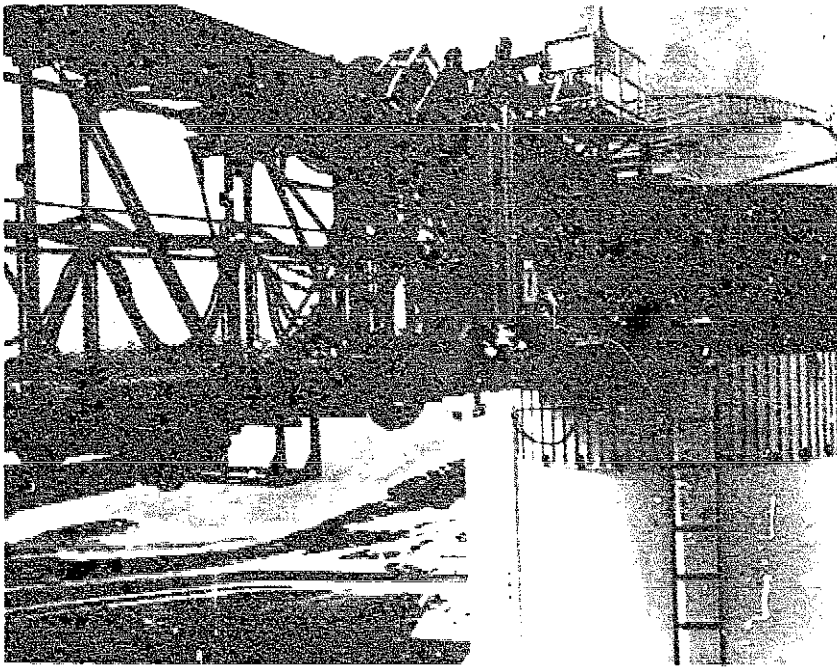




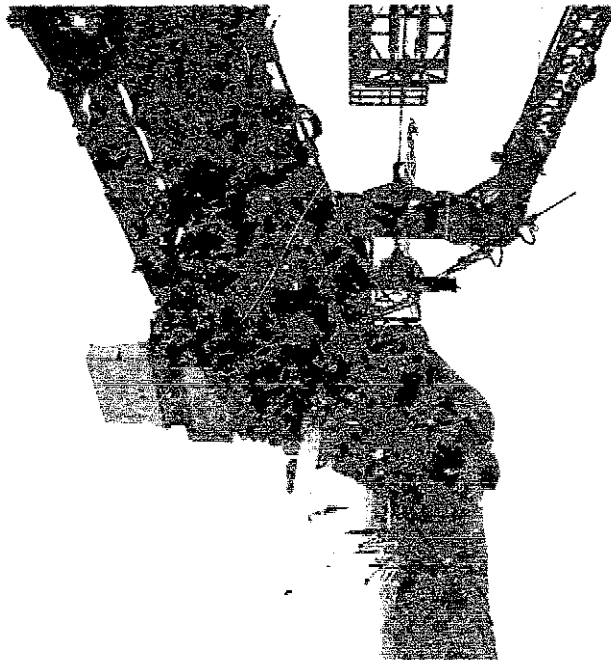
CAMERA No. 23B; located MLI 240-foot level, east side; coverage: LH2 heat exchanger and valve panel.



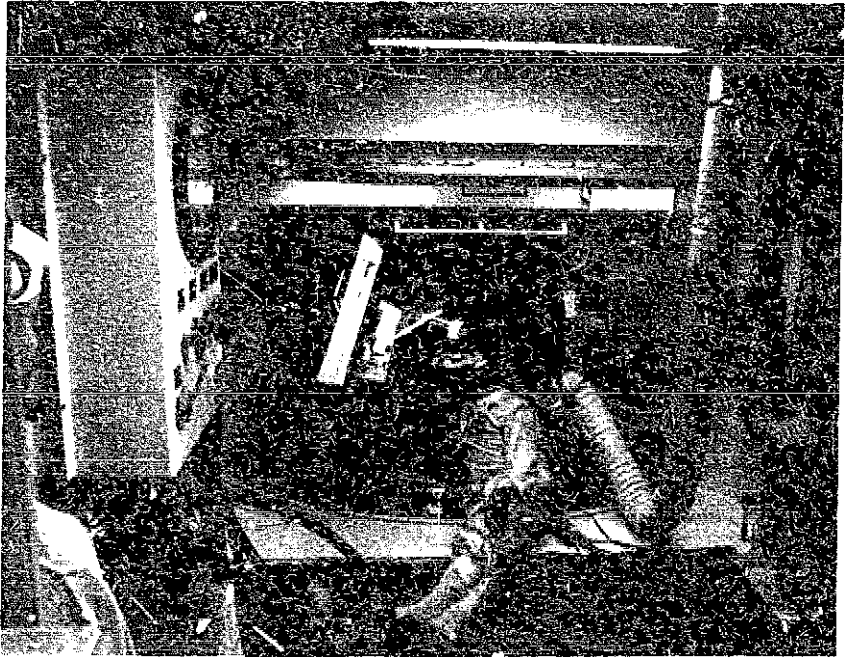
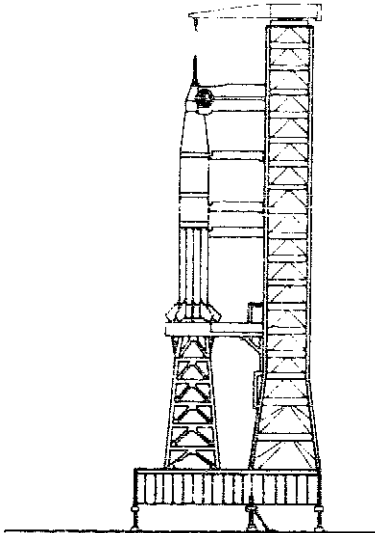
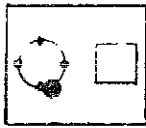
CAMERA No. 24B; located ML 260-foot level, south side; coverage: SIV-B APS module and service arm 6.



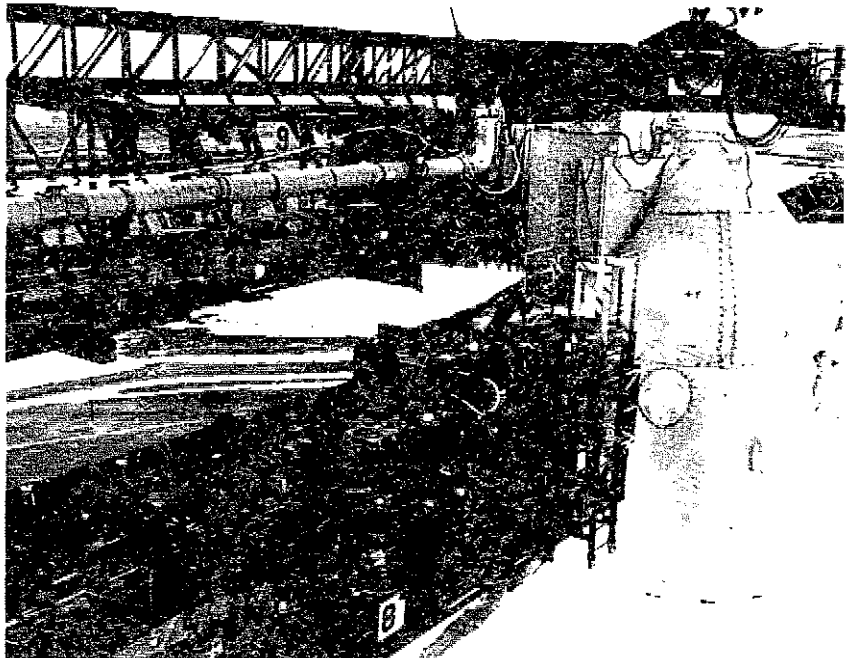
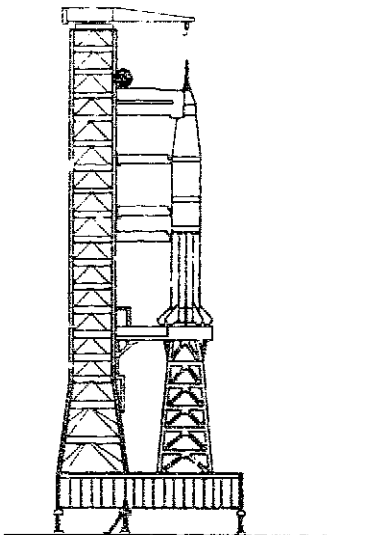
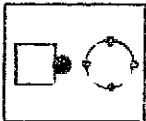
CAMERA No. 24B; Service arm 7 and IU access door.



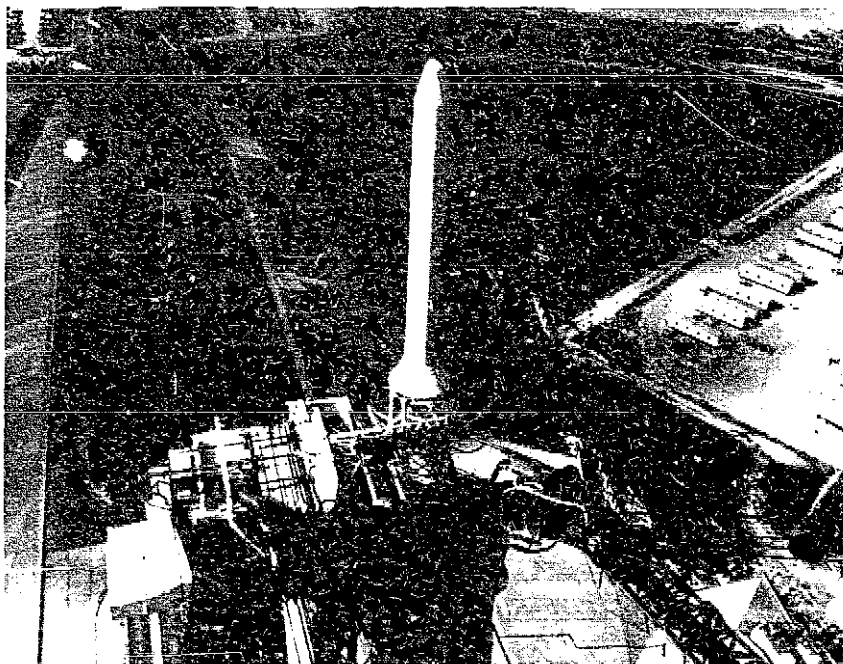
CAMERA No. 24B; Service arm 8.



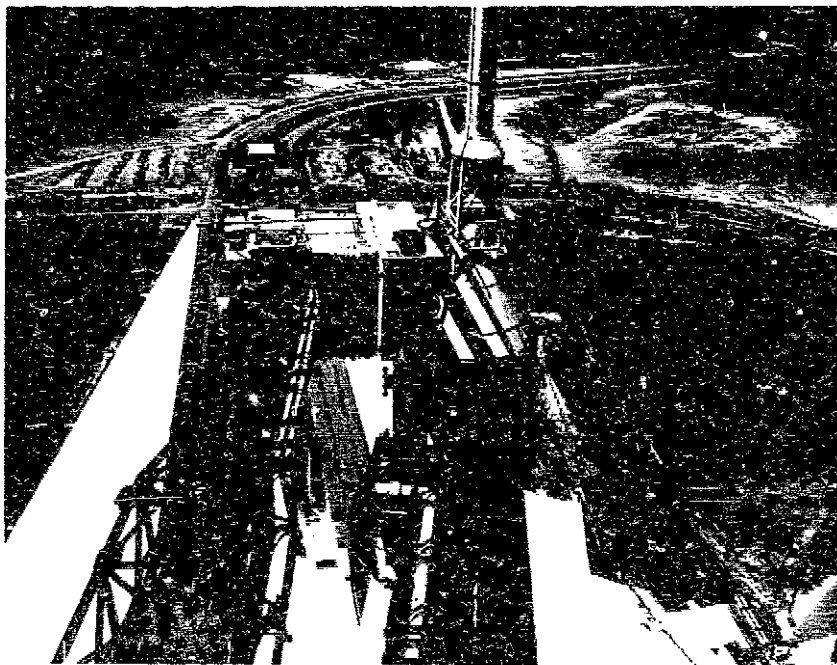
CAMERA No. 25B; located MLI 320-foot level, environmental chamber rear wall; coverage: interior of environmental chamber and command module (CM).



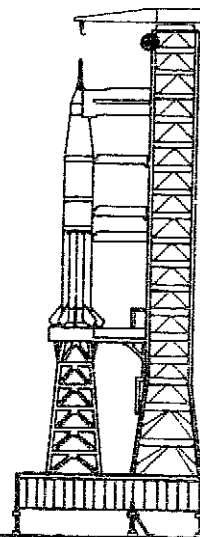
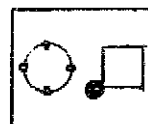
CAMERA No. 26B; located MLI 320-foot level, south side; coverage: access arm 9, CM and service module (SM).

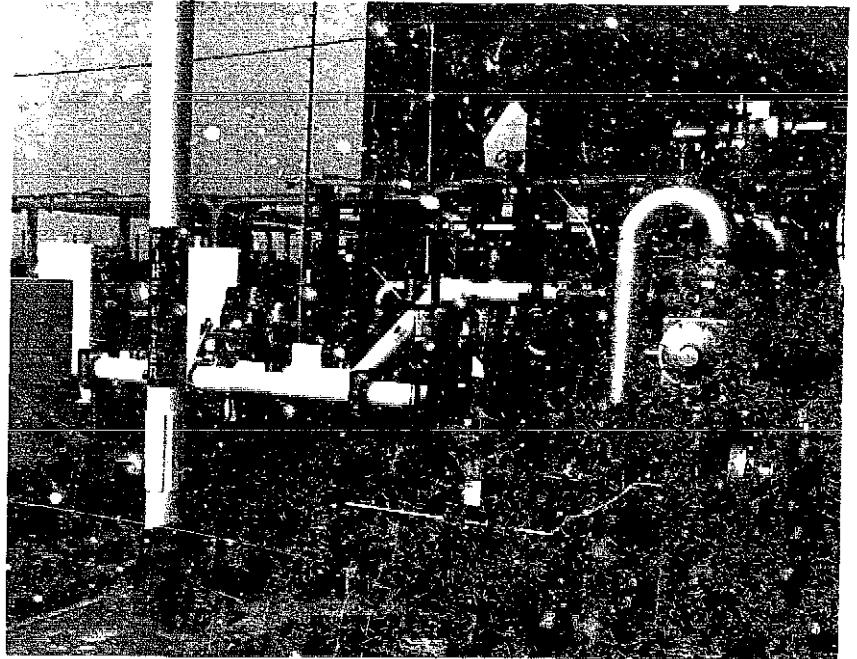
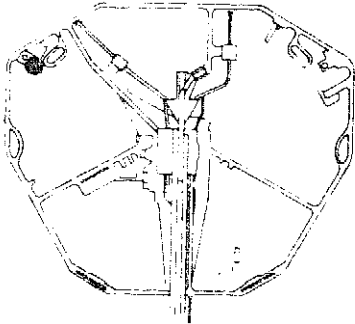


CAMERA No. 27B (Cont'd.); Access arm 9, CM, SM, damper arm and Launch Escape System (LES).

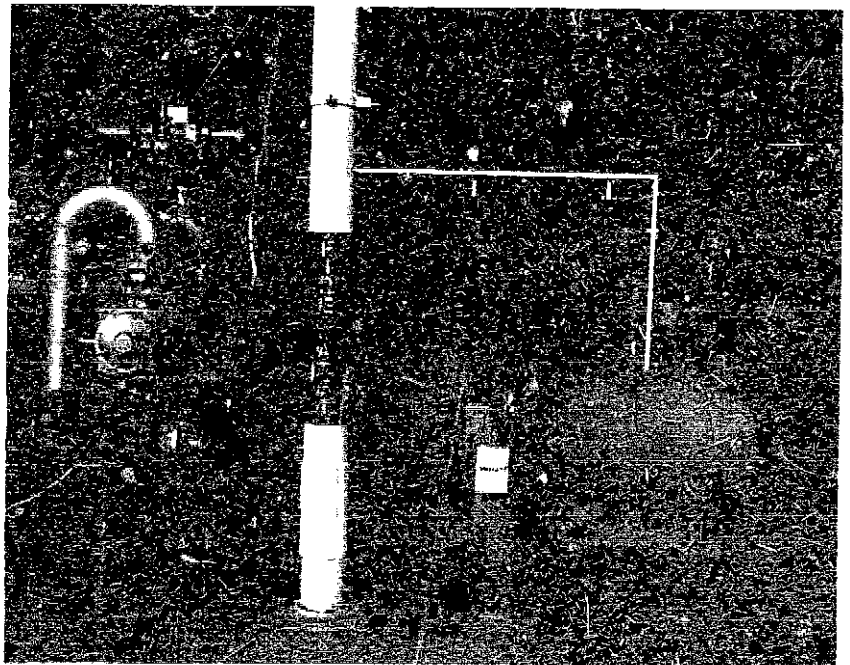


CAMERA No. 27B; located MLI 360-foot level, SE corner; coverage: Access arm 9, service arm 8, CM, SM

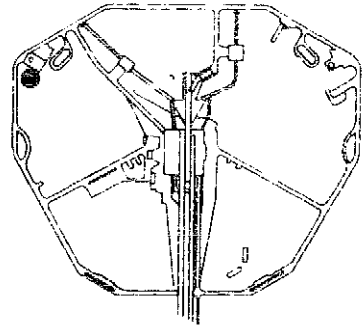
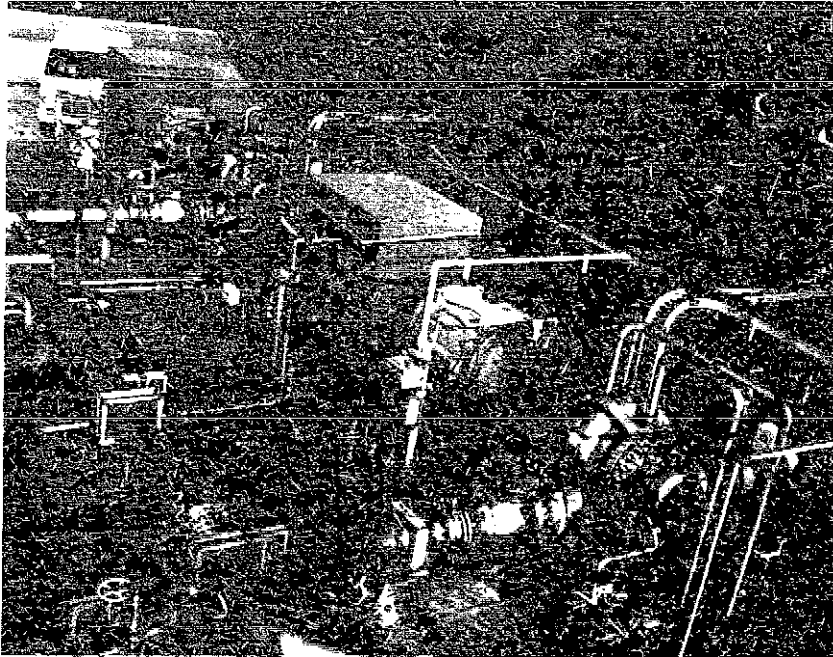




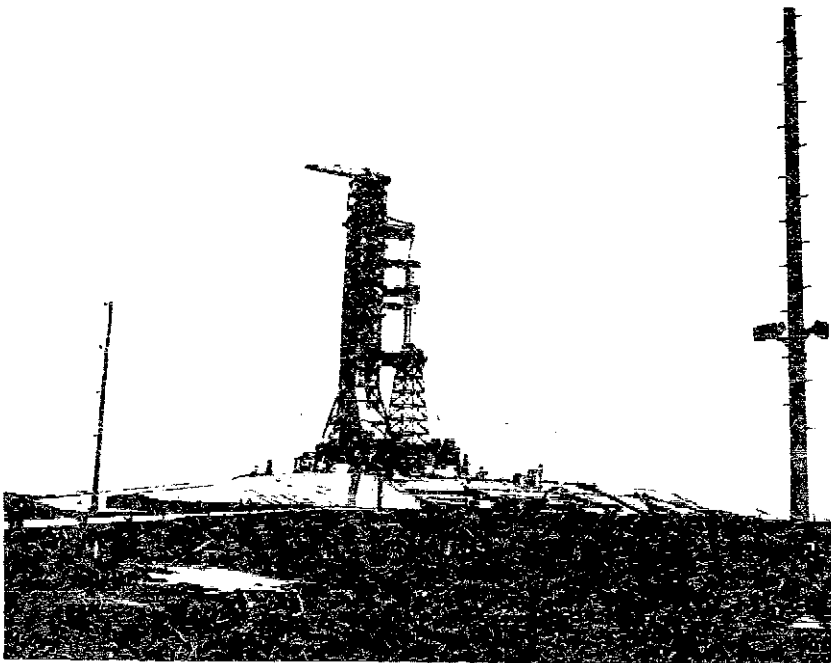
CAMERA No. 28B; located LC39B L02 storage facilities;
coverage: L02 pumps, valves and lines.



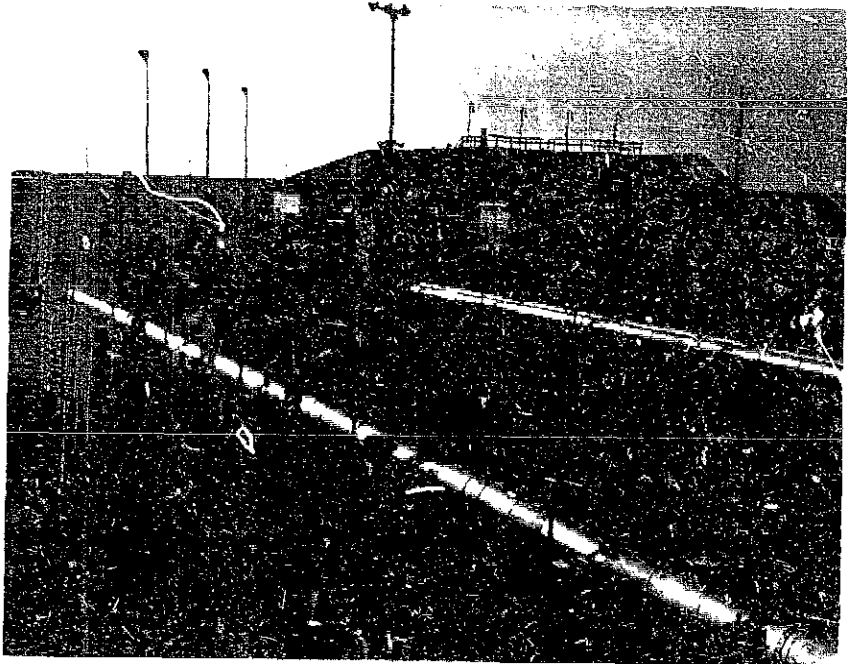
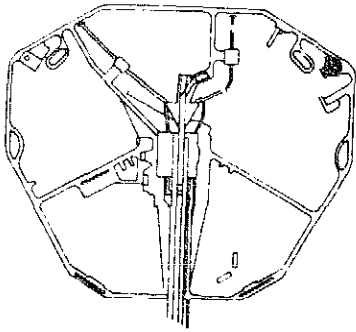
CAMERA No. 28B (Cont'd.); L02 pumps, valves and lines.



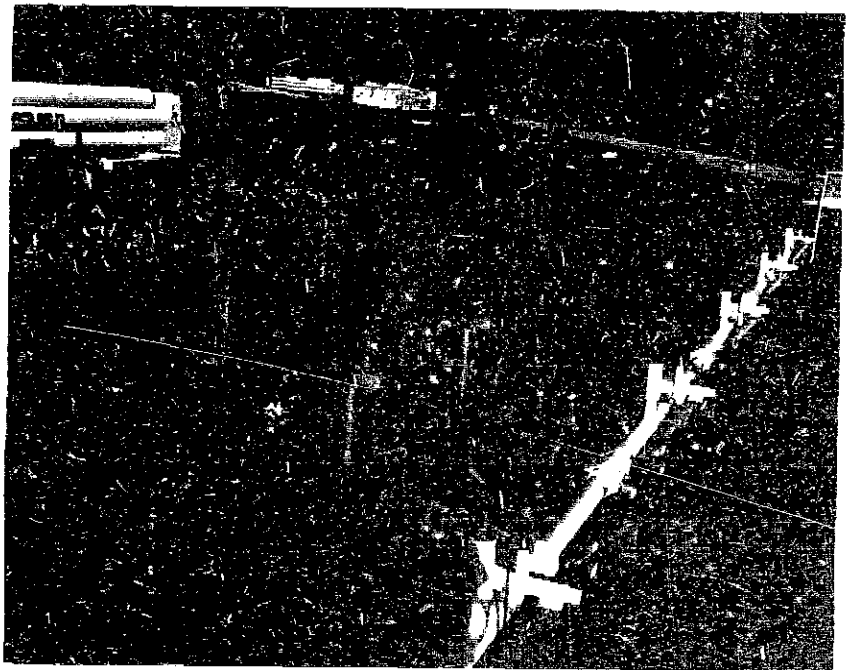
CAMERA No. 29B; located LC39B L02 storage facility;
coverage: (View 29A) L02 pumps, valves and lines.



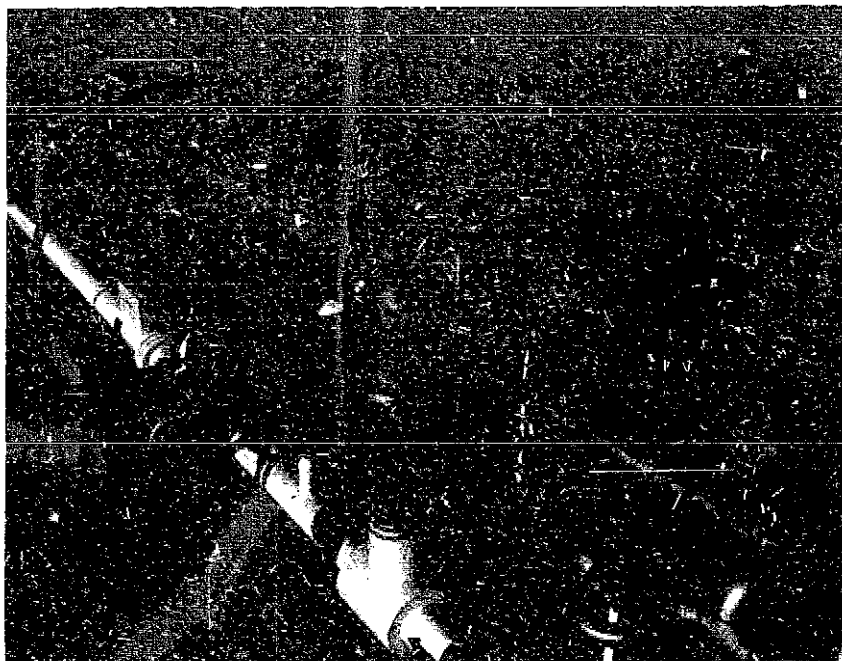
CAMERA No. 29B (Cont'd.); L02 line from L02 storage
facility to pad apron.



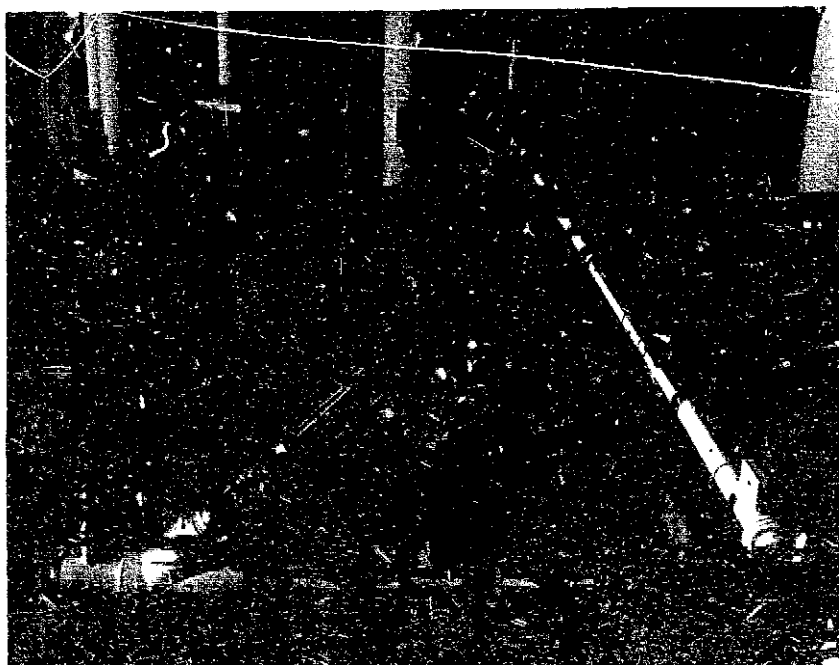
CAMERA No. 30B; located LC39B LH2 storage facility;
coverage: LH2 vaporizer.



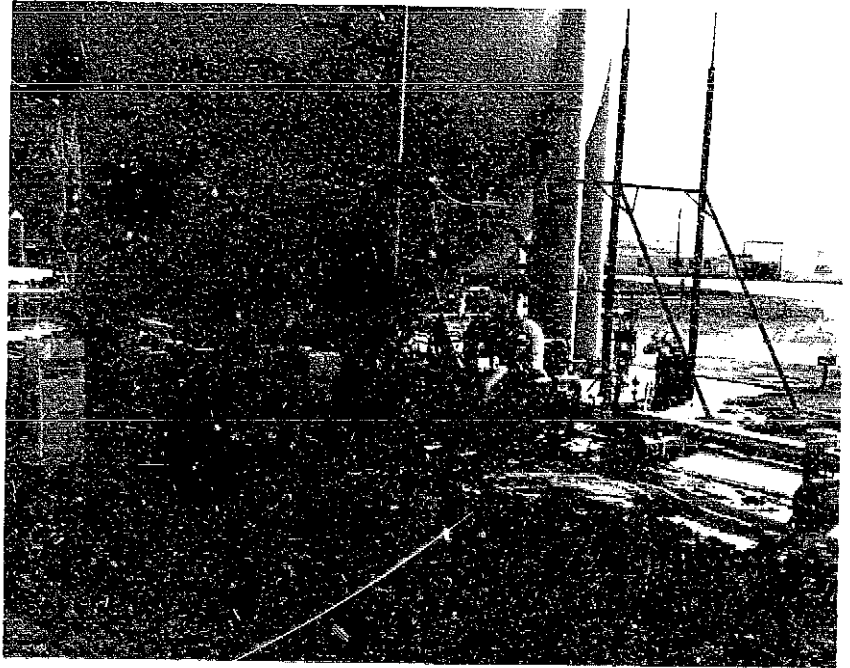
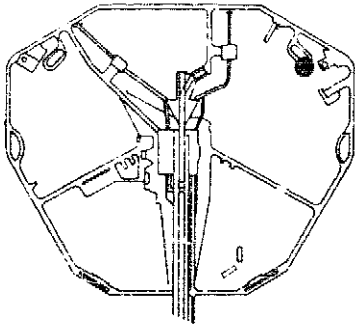
CAMERA No. 30B (Cont'd.) LH2 vaporizer, lines and valves.



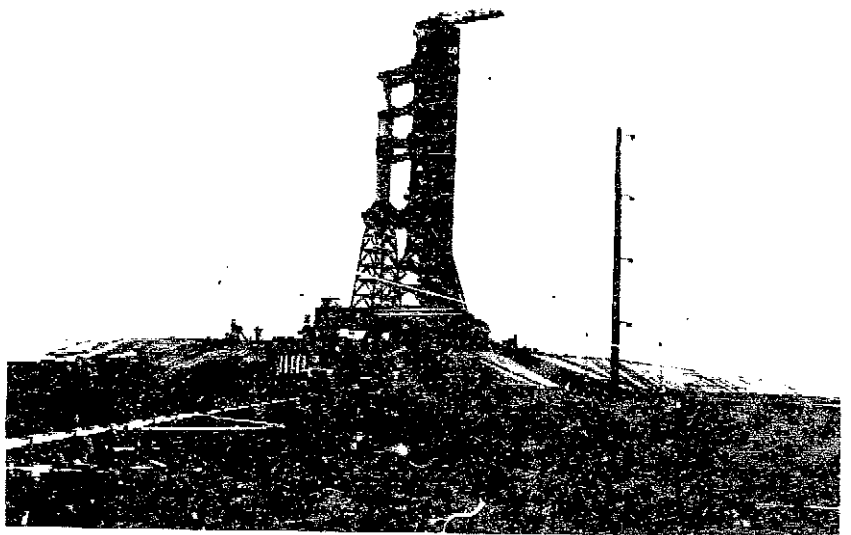
CAMERA No. 30B (Cont'd.); LH2 vaporizer, valves and lines.



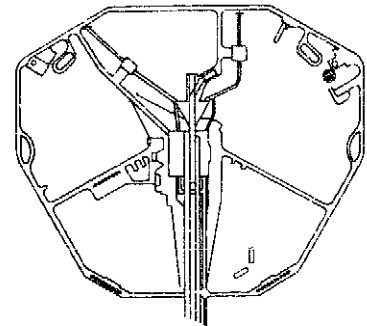
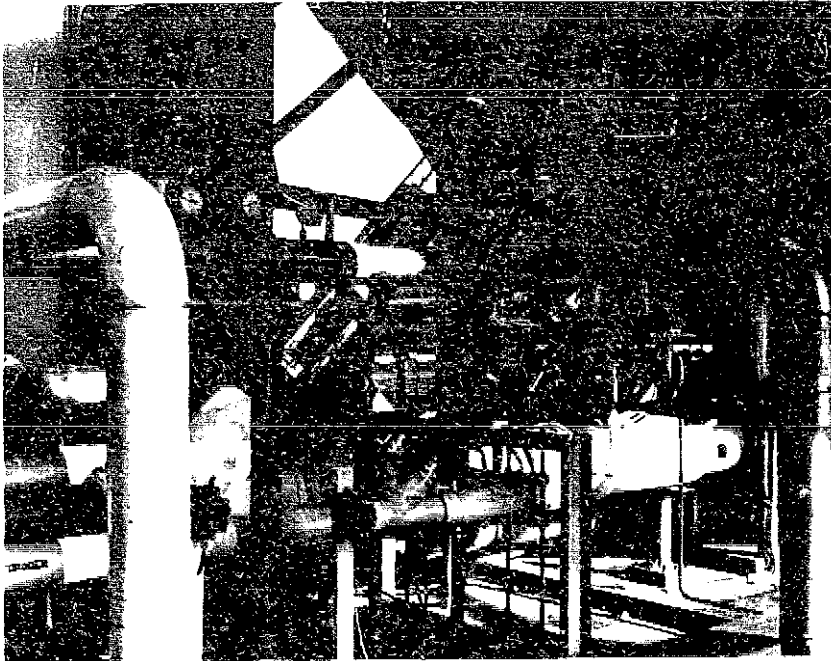
CAMERA No. 30B; (Cont'd.) LH2 vaporizer, valves and lines.



CAMERA No. 31B; located LC39B perimeter site 1; coverage:
(View 31A) LH2 storage tank, valves and lines.



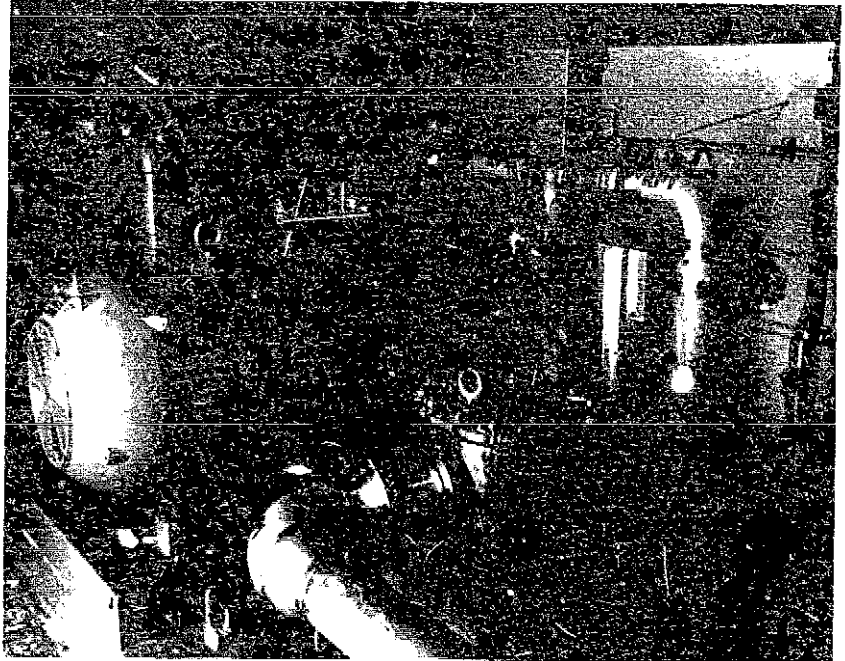
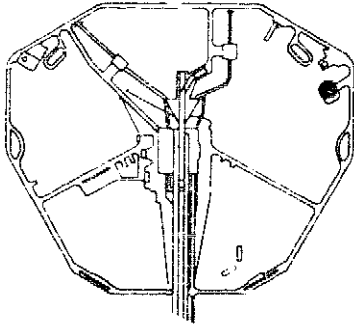
CAMERA No. 31B (Cont'd.) LH2 lines to pad apron.



CAMERA No. 32B; located LC39B LH2 storage facility;
coverage: LH2 storage tank, valves and lines.



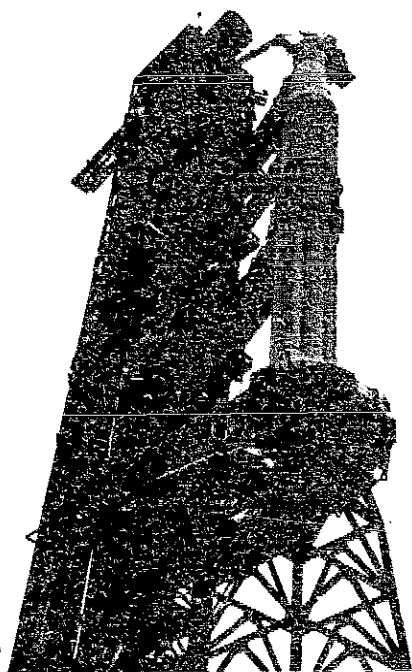
CAMERA No. 32B; (Cont'd.) LH2 valves and lines.



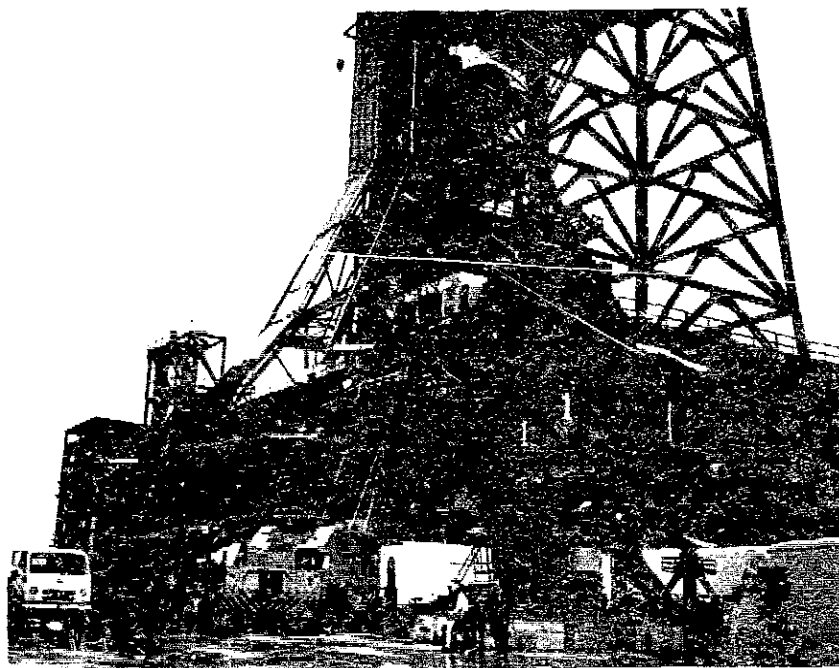
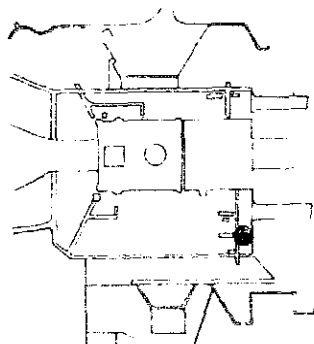
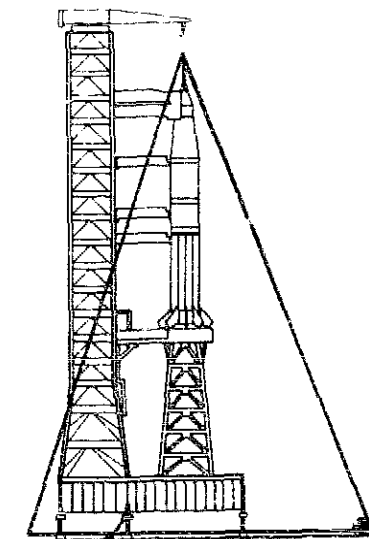
CAMERA No. 33B; located RP-1 storage facility; coverage:
(cont'd.) RP-1 pump.



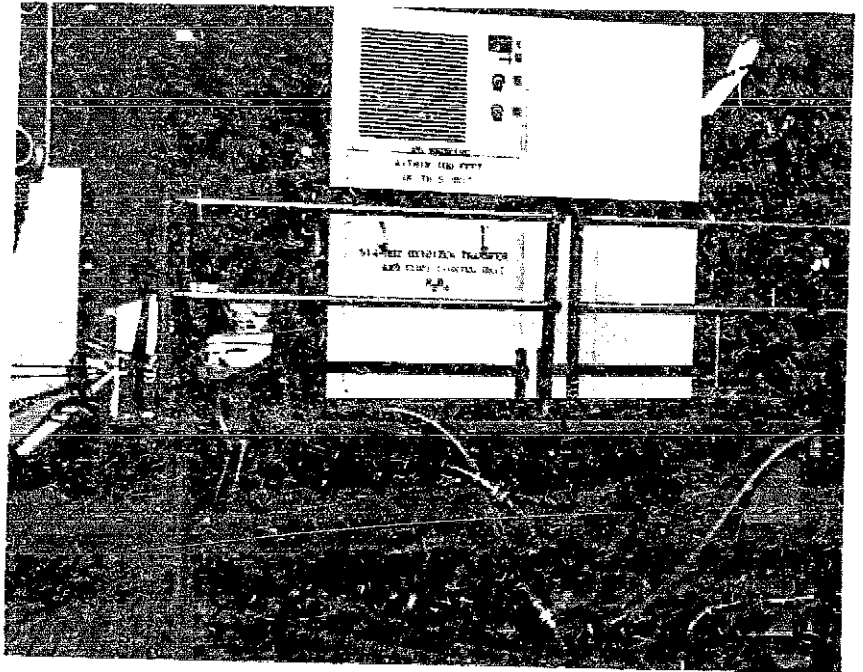
CAMERA No. 33B (Cont'd.); RP-1 pumps, valves and lines.



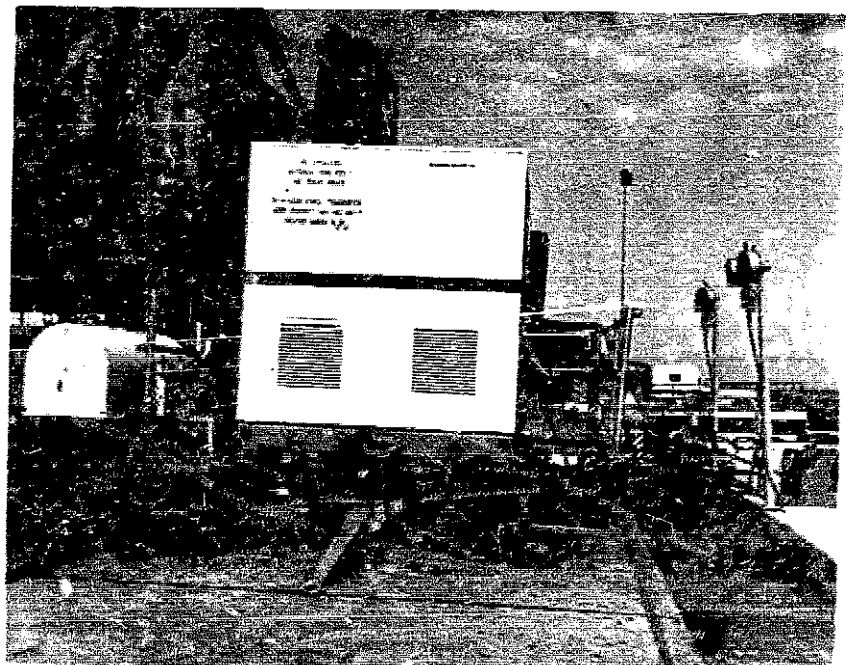
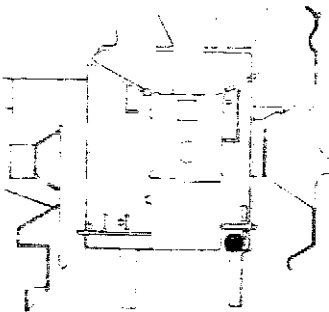
CAMERA No. 34B; located LC39B SW corner pad apron; coverage: Space vehicle and water riser to ML 320-foot level.



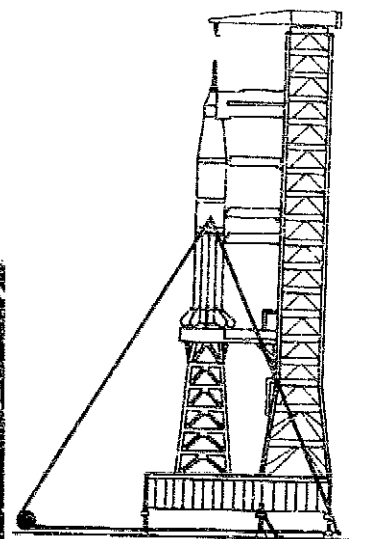
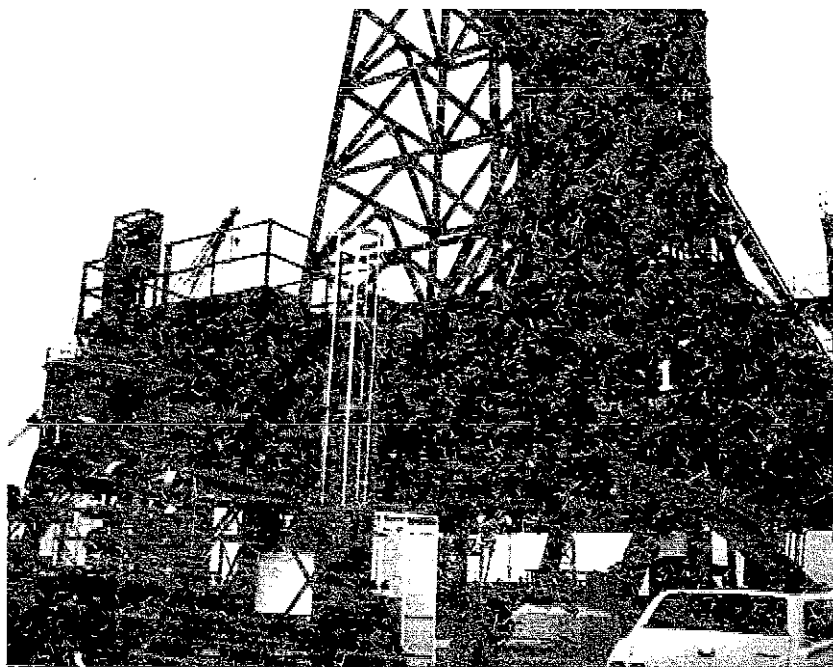
CAMERA No. 34B (Cont'd.); personnel ingress and egress at ground level elevator entrance.



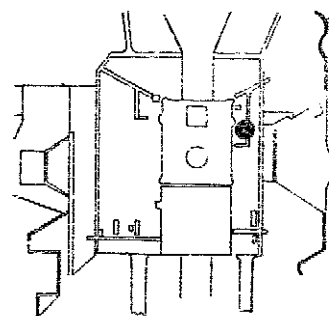
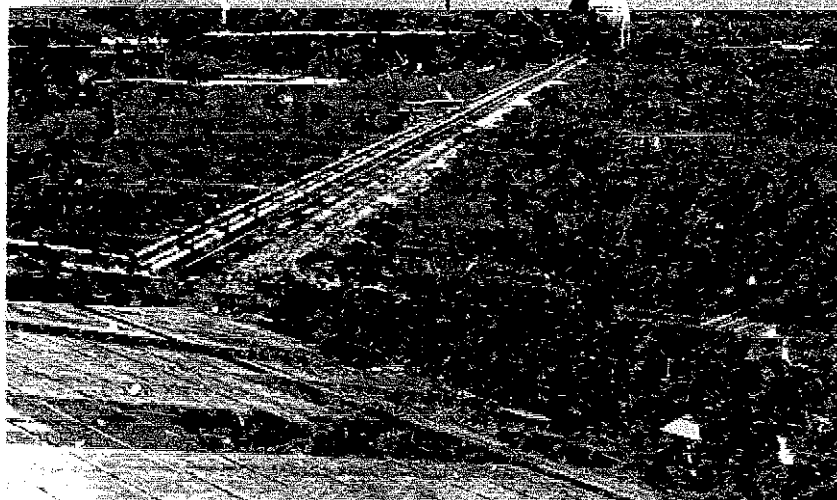
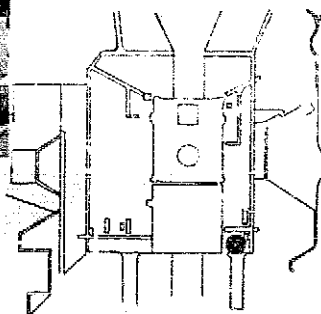
CAMERA No. 34B (Cont'd.); Oxidizer transfer and conditioning unit.



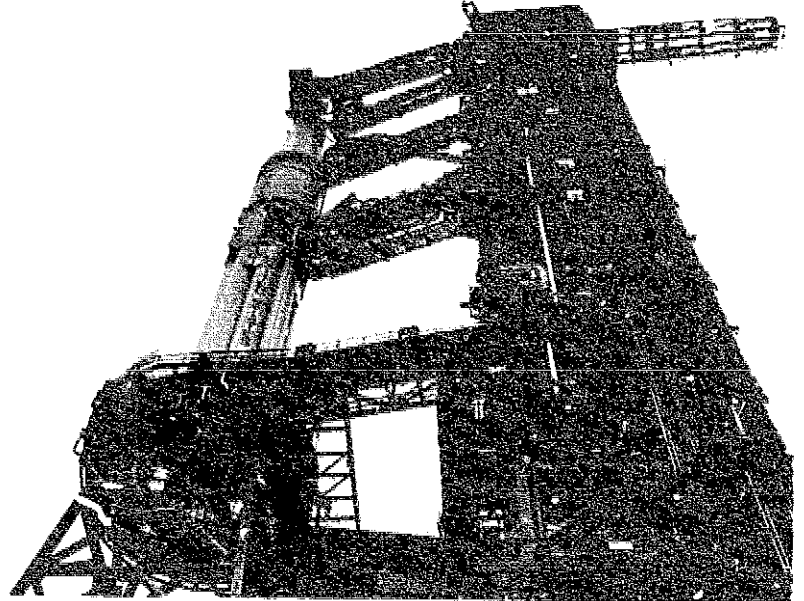
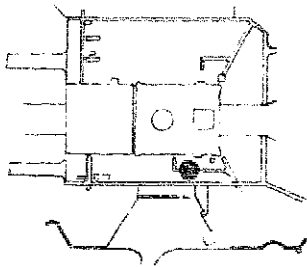
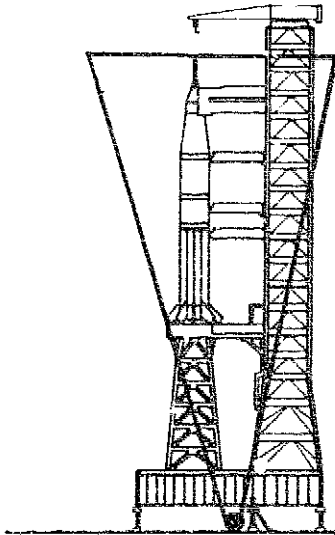
CAMERA No. 35B; located LC39B SE corner pad apron, coverage: Fuel transfer unit.



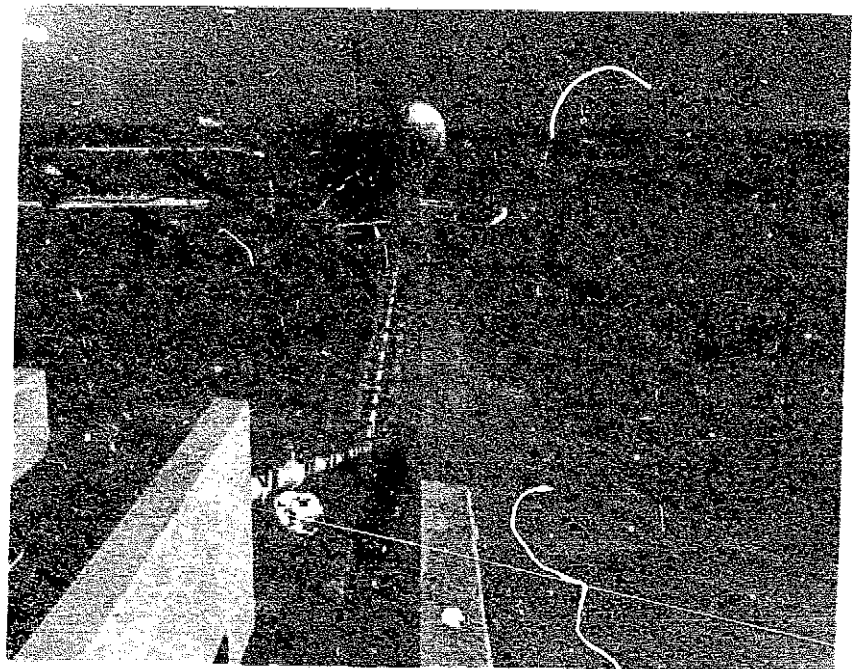
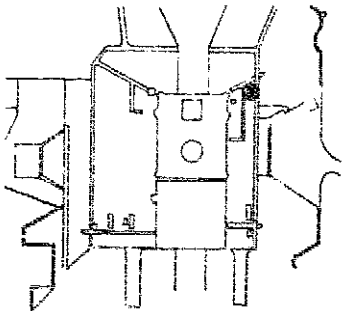
CAMERA No. 35B; (Cont'd.) Pad apron and ML including side I of umbilical tower.



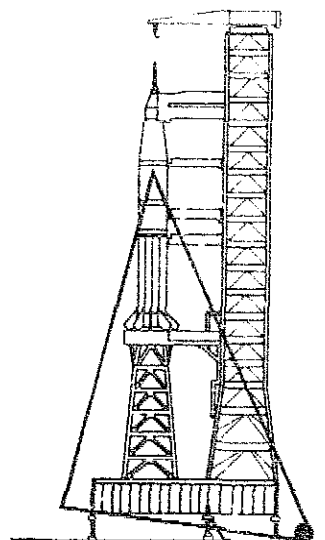
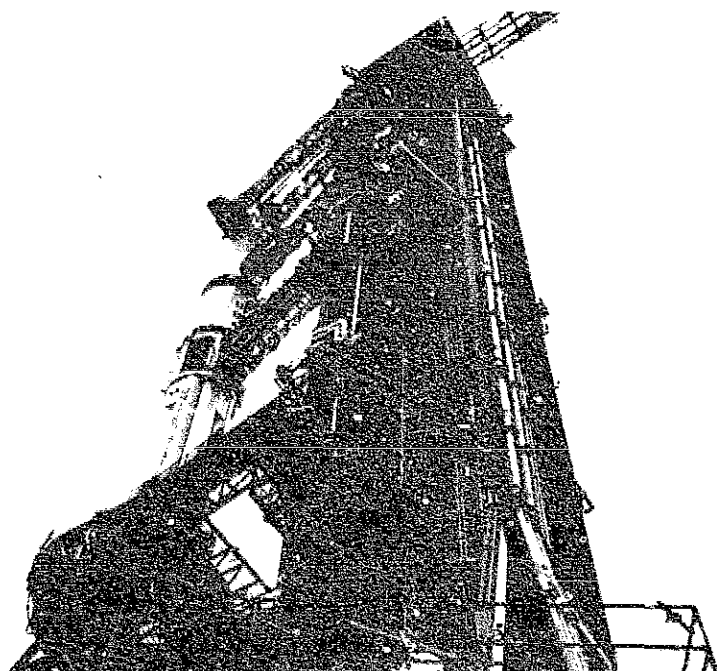
CAMERA No. 36B; located LC39B center, east side of pad apron; coverage: LH2 lines and storage tank.



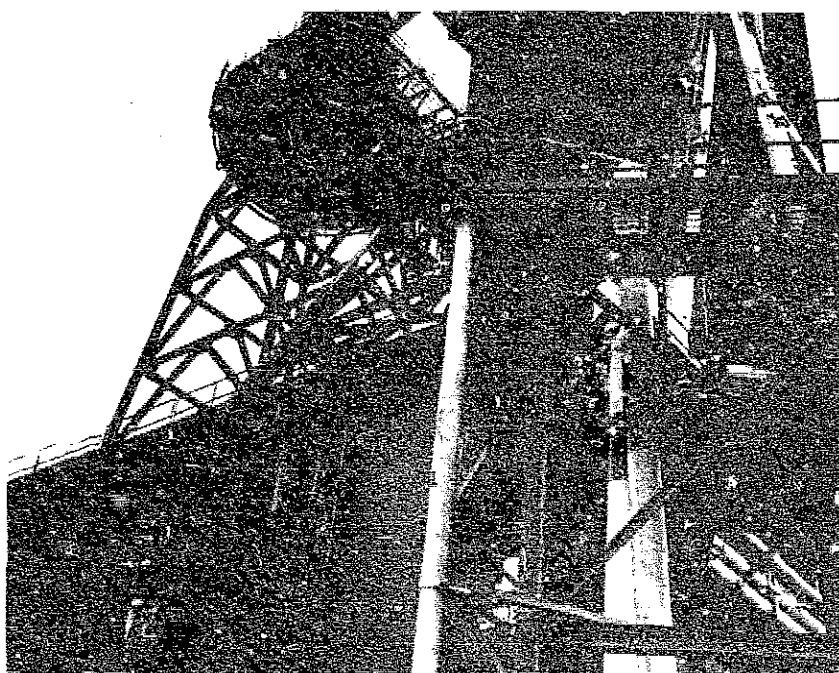
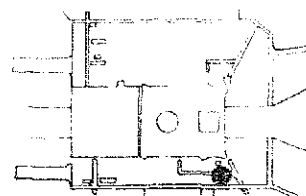
CAMERA No. 36B; Space vehicle and ML side 4.



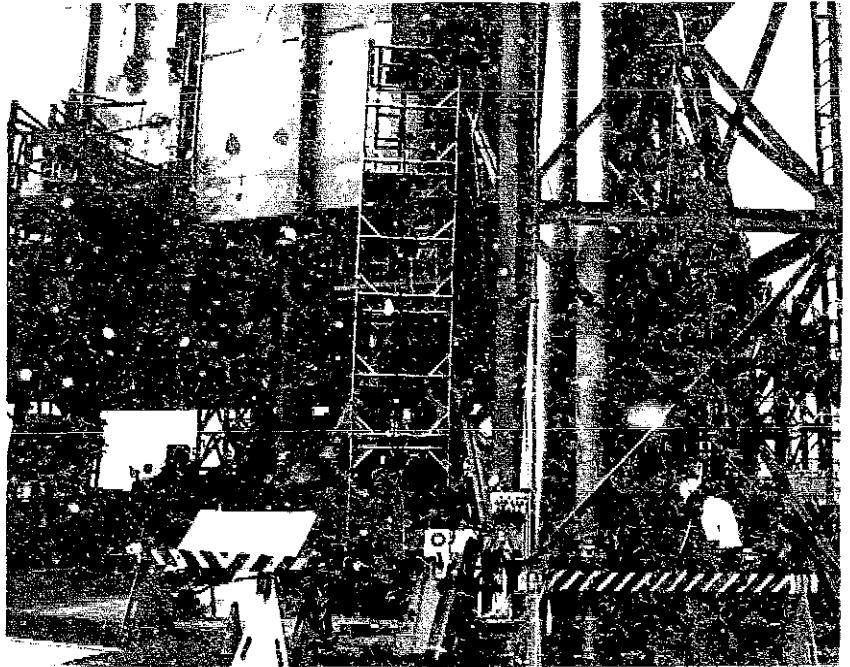
CAMERA No. 38B; located LC39B NE corner of pad apron; coverage: LH2 lines and storage tank.



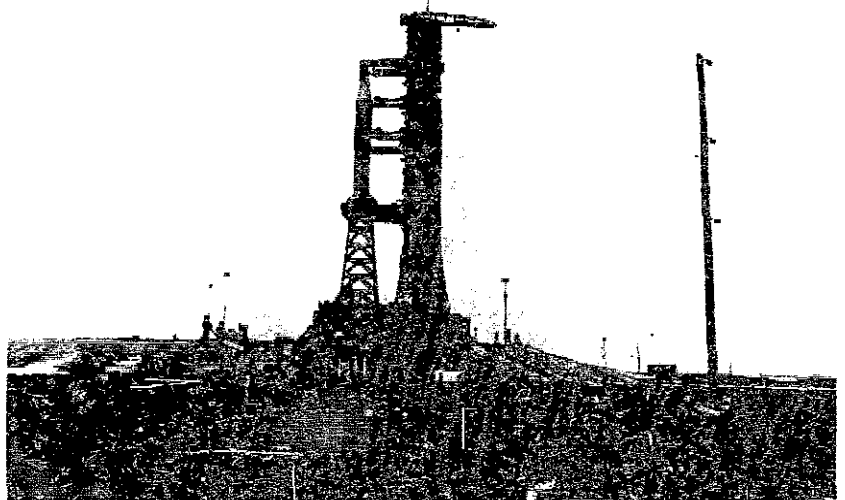
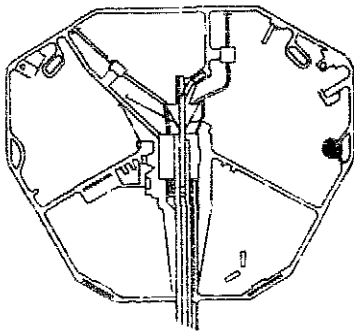
CAMERA No. 38B (Cont'd.); LH2 expansion joints, ML side 4 and space vehicle.



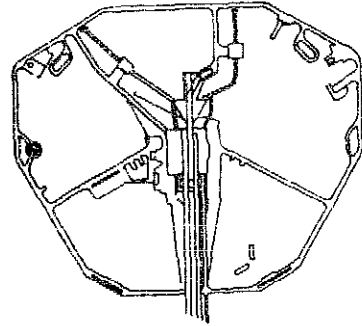
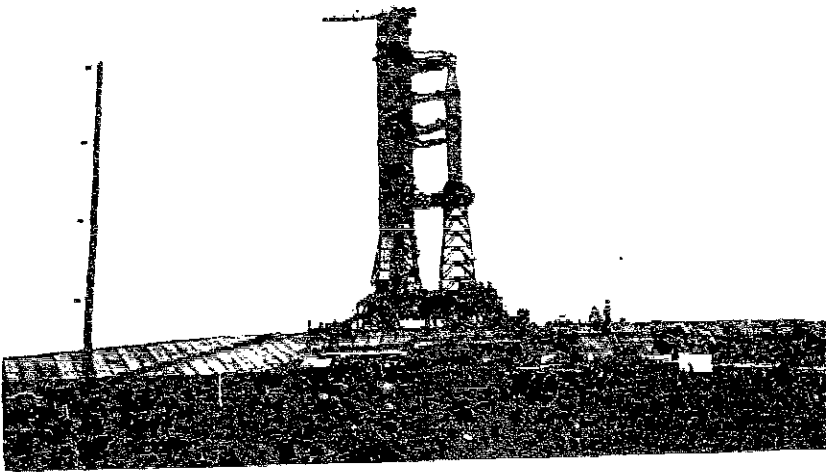
CAMERA No. 38B (Cont'd.); LH2 disconnect tower piping and ML connection.



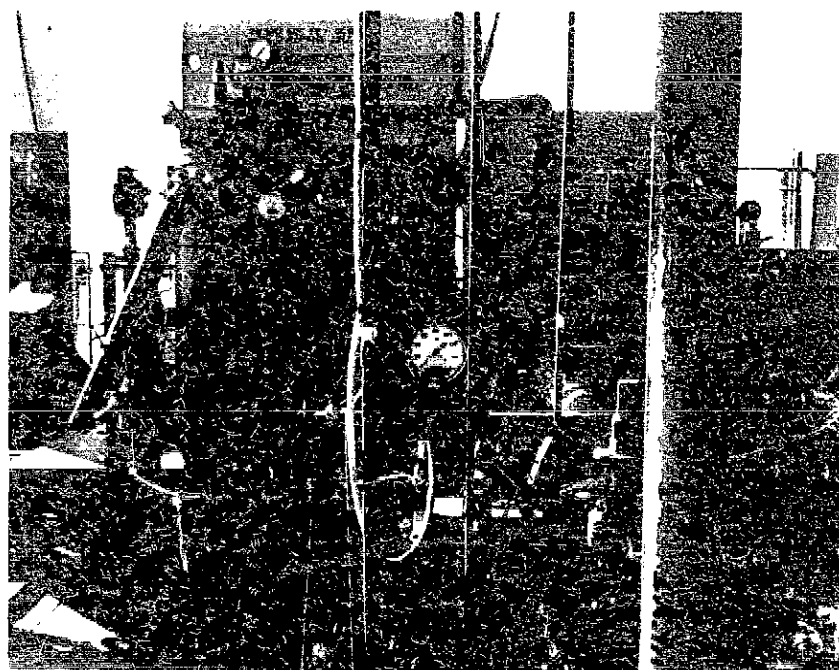
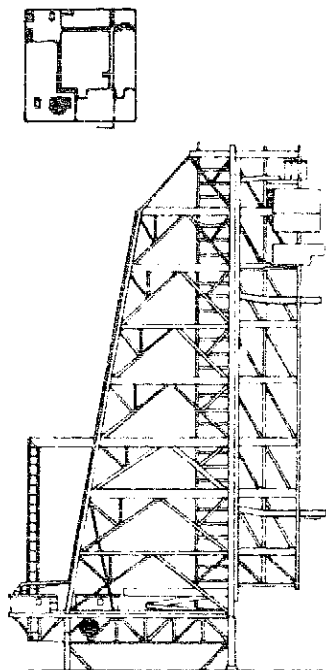
CAMERA No. 38B (Cont'd.); Pad apron at ground level, east side.



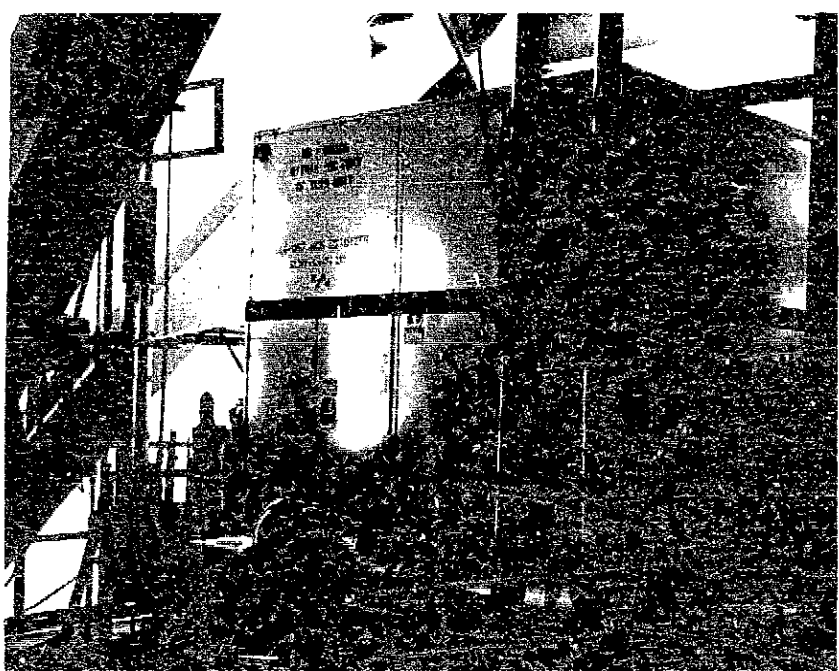
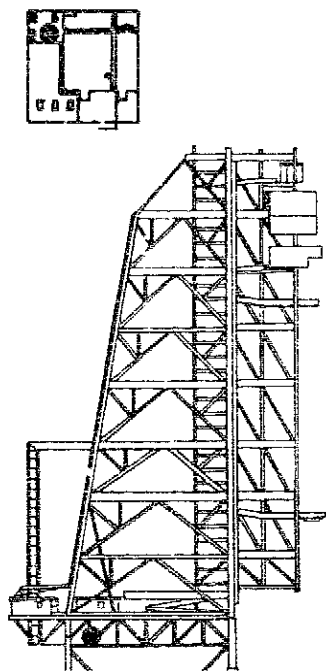
CAMERA No. 41B; located LC39B on photographic tracking mount at perimeter site 2; coverage: space vehicle during first 1,300 feet of flight (special bore-sight camera).



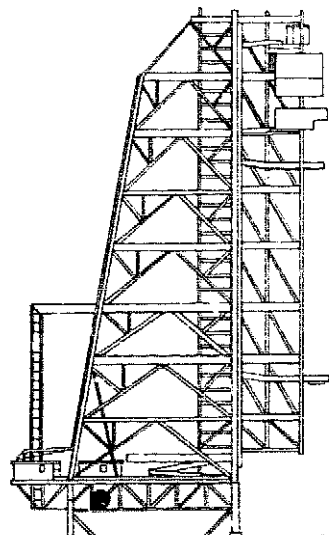
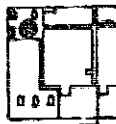
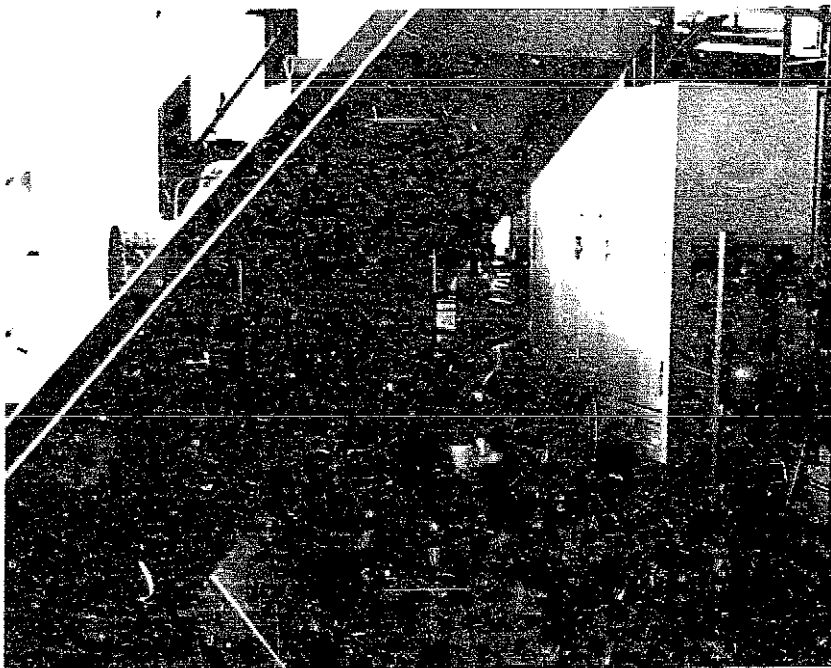
CAMERA No. 42B; located LC39B on photographic tracking mount at perimeter site 5; coverage: space vehicle during first 1,300 feet of flight (special bore-sight camera).



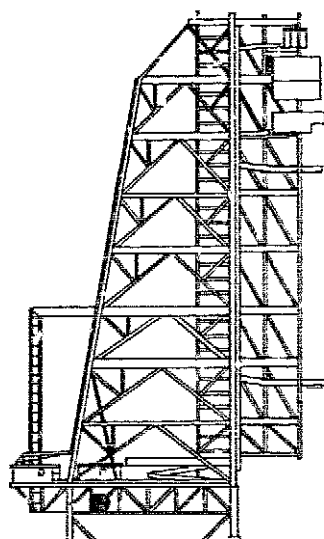
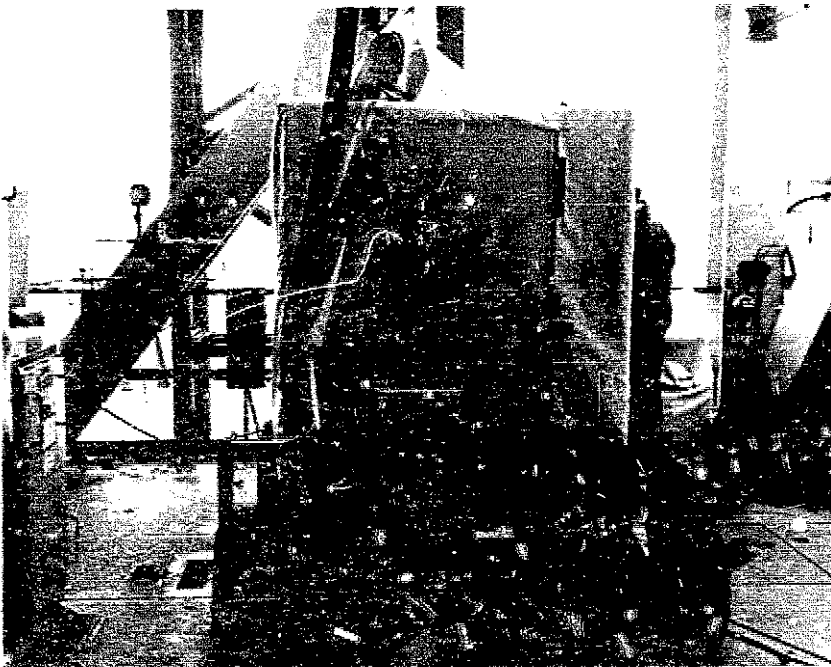
CAMERA No. 46B; located MSS 22-foot level, east side;
coverage: LM and CSM RCS fuel service units.



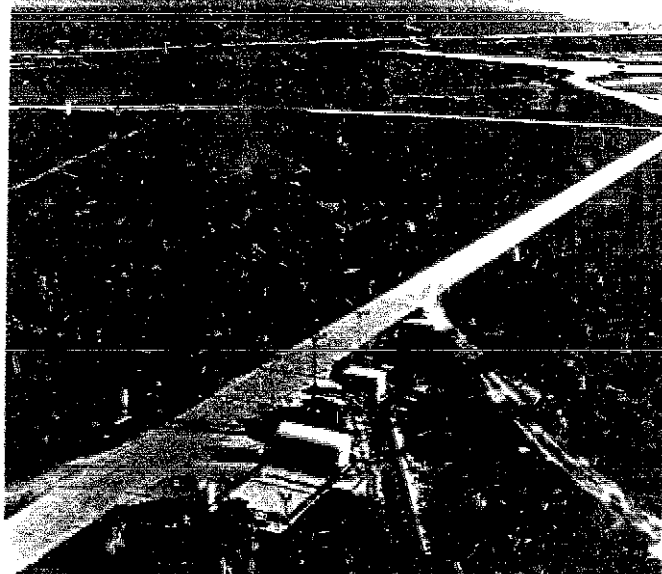
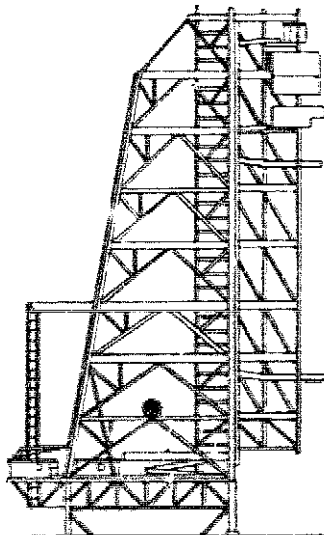
CAMERA No. 47B; located MSS 22-foot level, west side;
coverage: RCS oxidizer servicing unit.



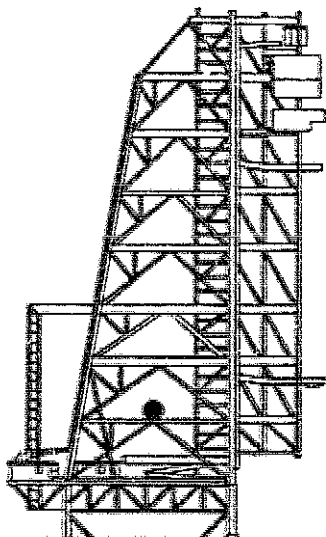
CAMERA No. 47B (Cont'd.); Oxidizer servicing unit.



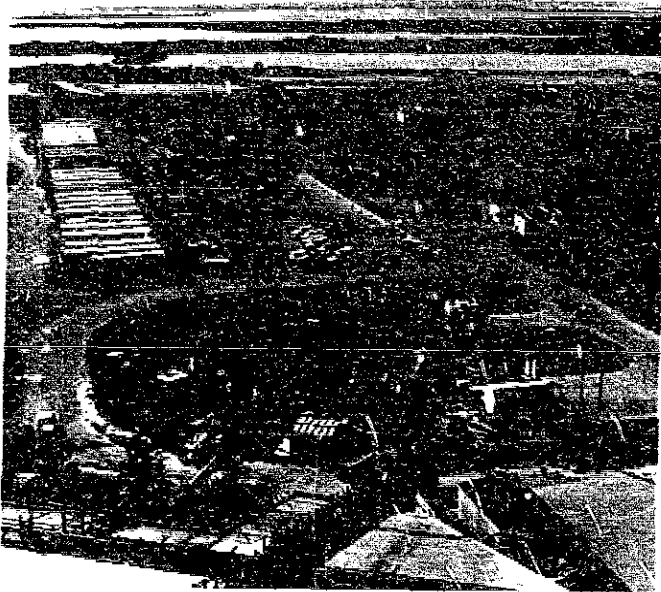
CAMERA No. 47B (Cont'd.) helium transfer unit.



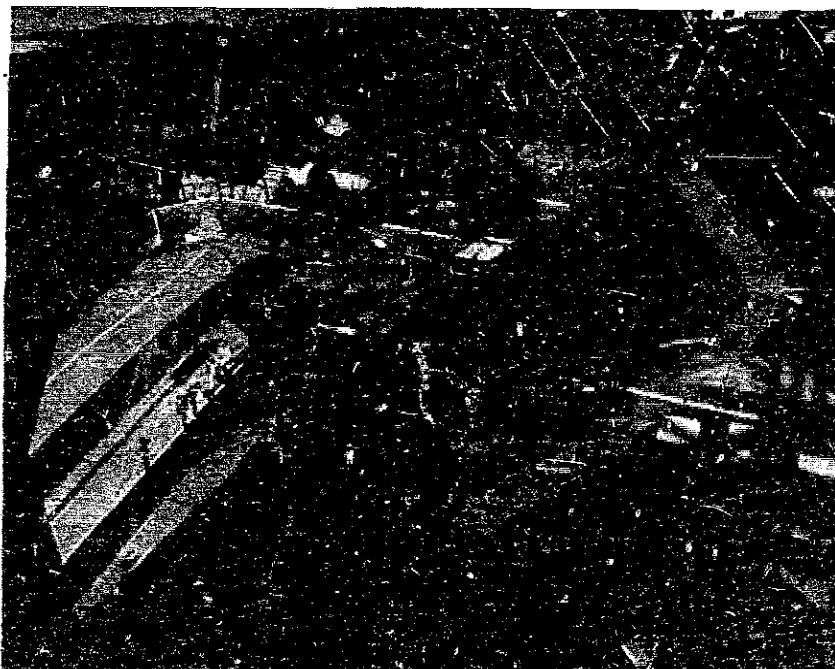
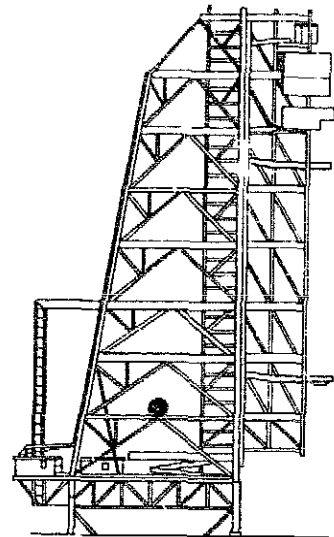
CAMERA No. 48B; located MSS 44-foot level, east side; coverage: fuel ready storage unit and fuel toxic vapor disposal unit.



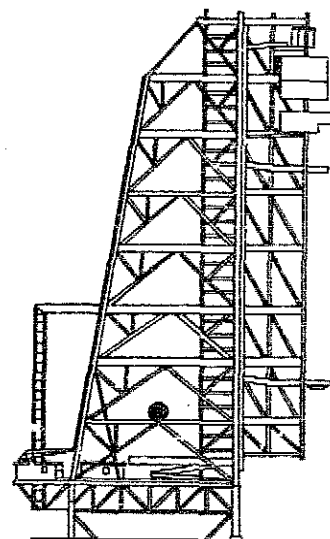
CAMERA No. 48B; (Cont'd.) pad apron east side.

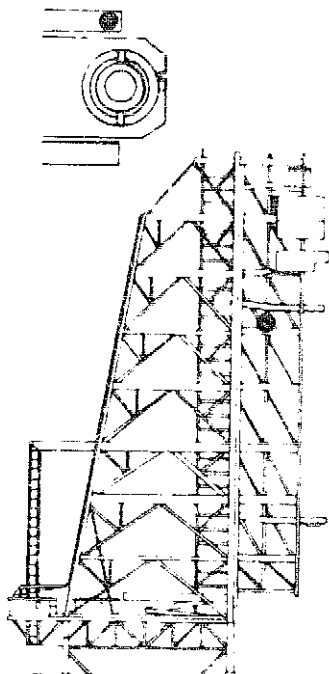


CAMERA No. 49B; located MSS 44-foot level, west side; coverage: oxidizer ready storage unit and oxidizer toxic vapor disposal unit.

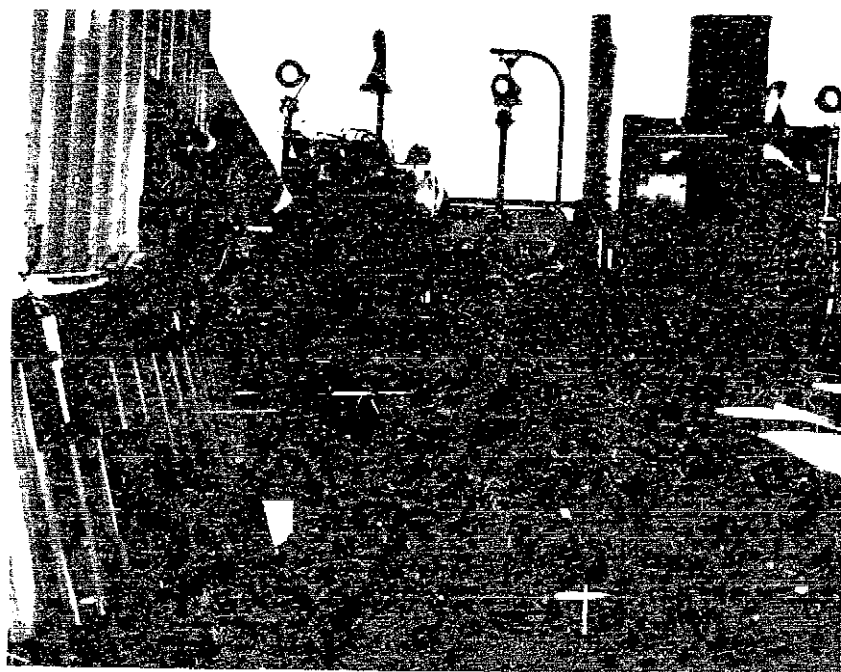


CAMERA No. 49B (Cont'd.); Apron, west side.

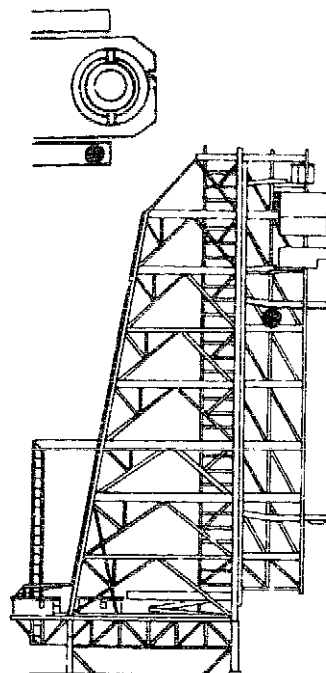
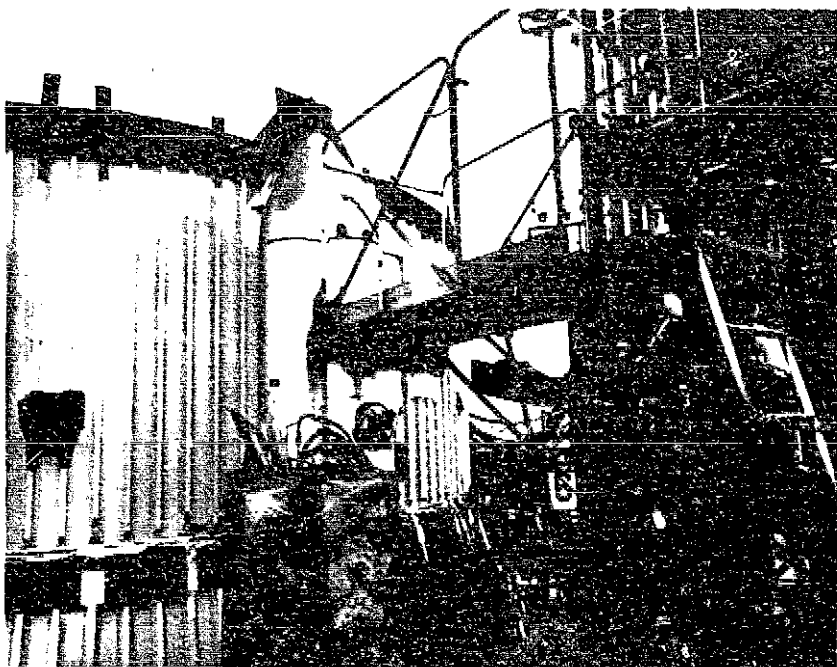




CAMERA No. 50B; located MSS 224-foot level
F, west side; coverage: SIV-B APS module.



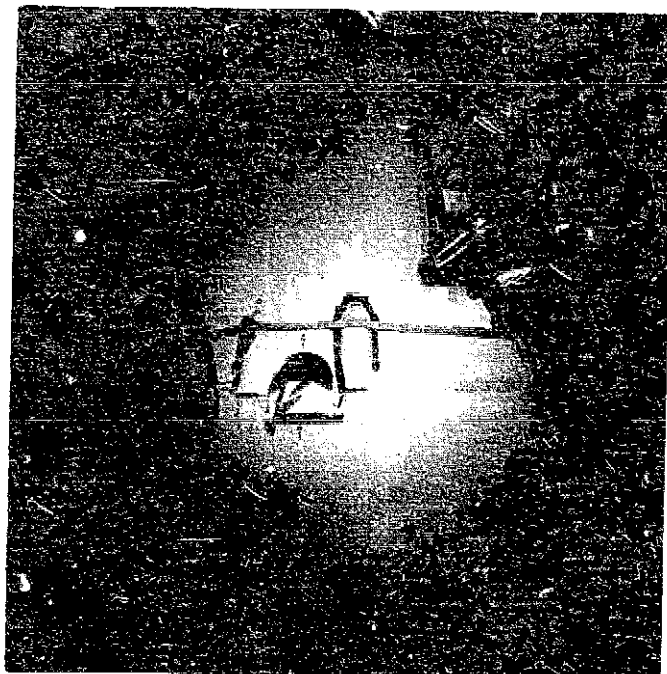
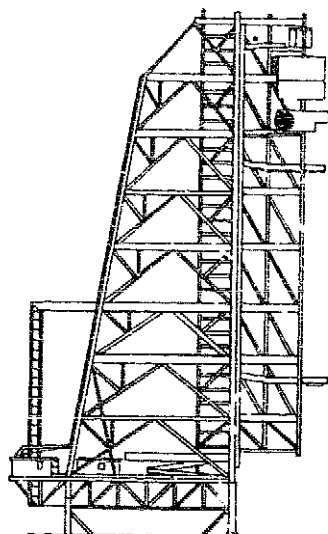
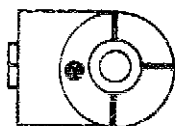
CAMERA No. 50B (Cont'd.) SIV-B APS module.



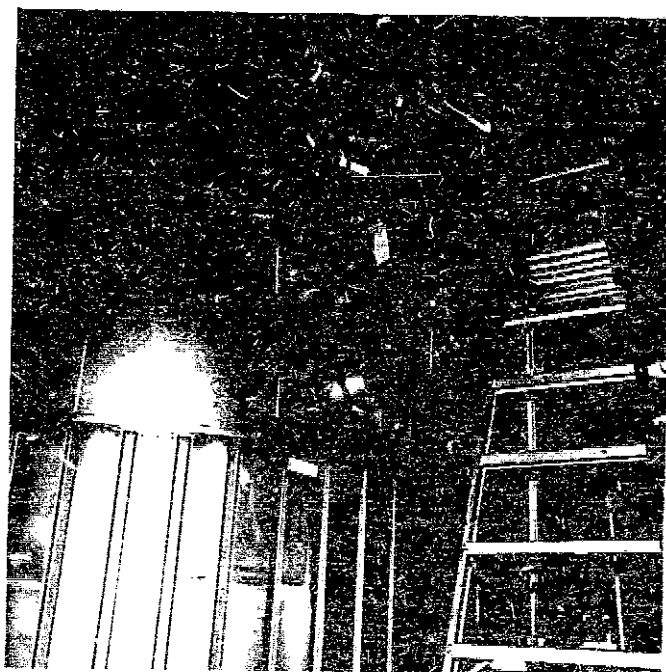
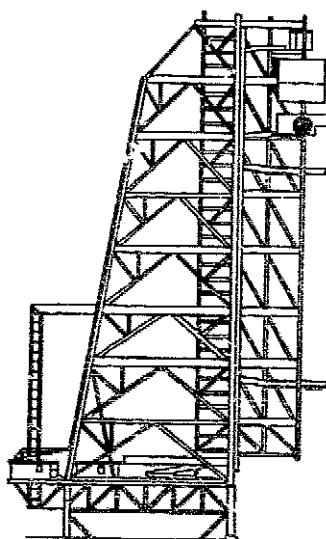
CAMERA No. 51B; located MSS 224-foot level F, east side; coverage: SIV-B APS module.



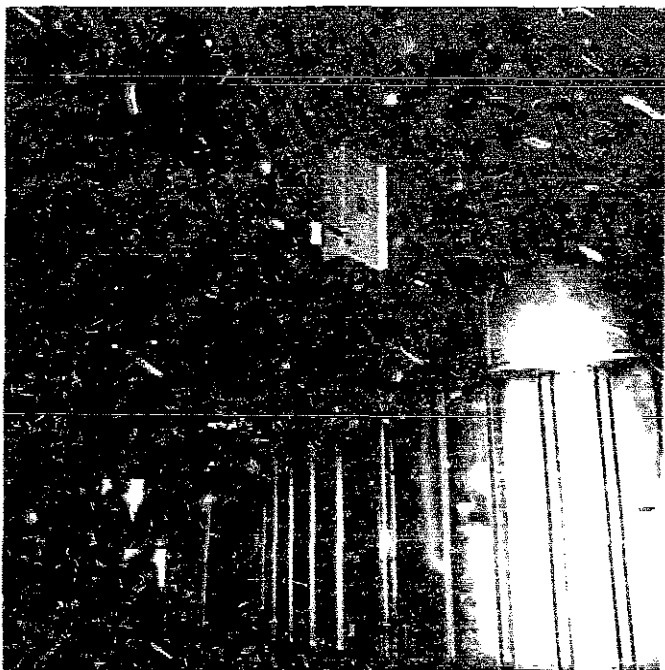
CAMERA No. 51B (Cont'd.); SIV-B APS module.



CAMERA No. 52B; located MSS level 3A;
coverage: SLA area below CSM.



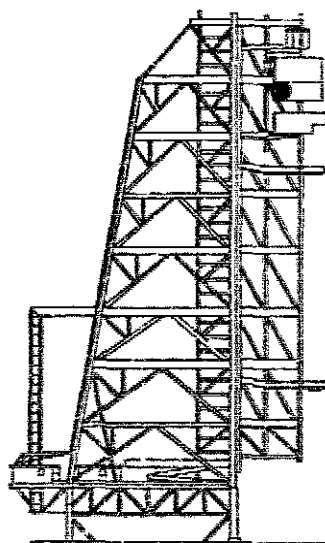
CAMERA No. 53B; located MSS level 4A;
coverage: SM fill ports and RCS motors.



CAMERA No. 53B (Cont'd.); RCS motors and GSE interface.

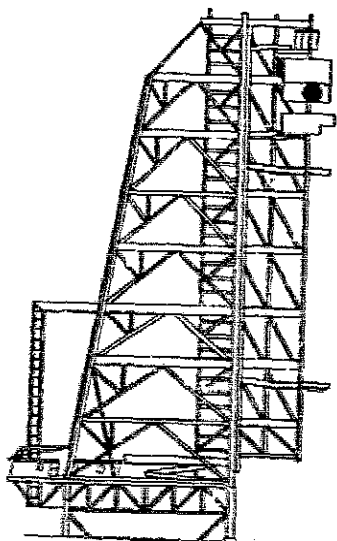


CAMERA No. 54B; located MSS level 4A; coverage: SM fill ports and hardlines.





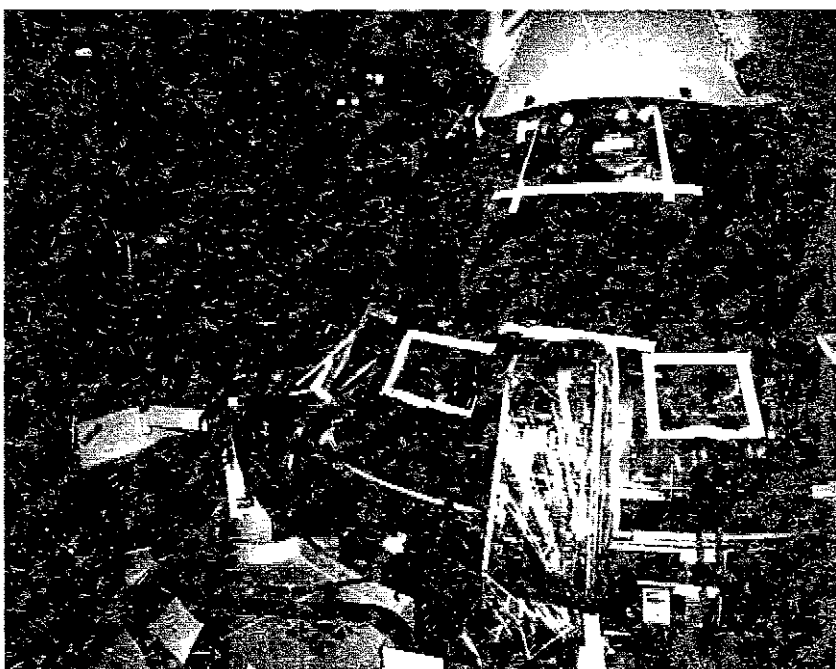
CAMERA No. 54B (Cont'd.) RCS motors and hardlines.



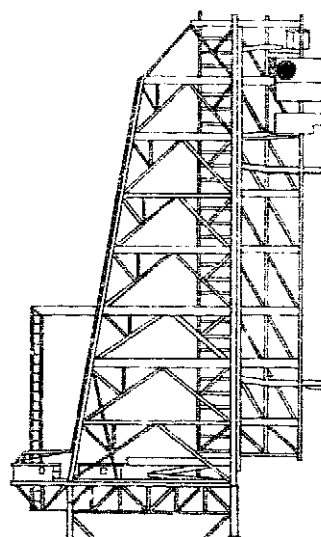
CAMERA No. 55B; located MSS level 4A; coverage: fill ports and RCS motors.

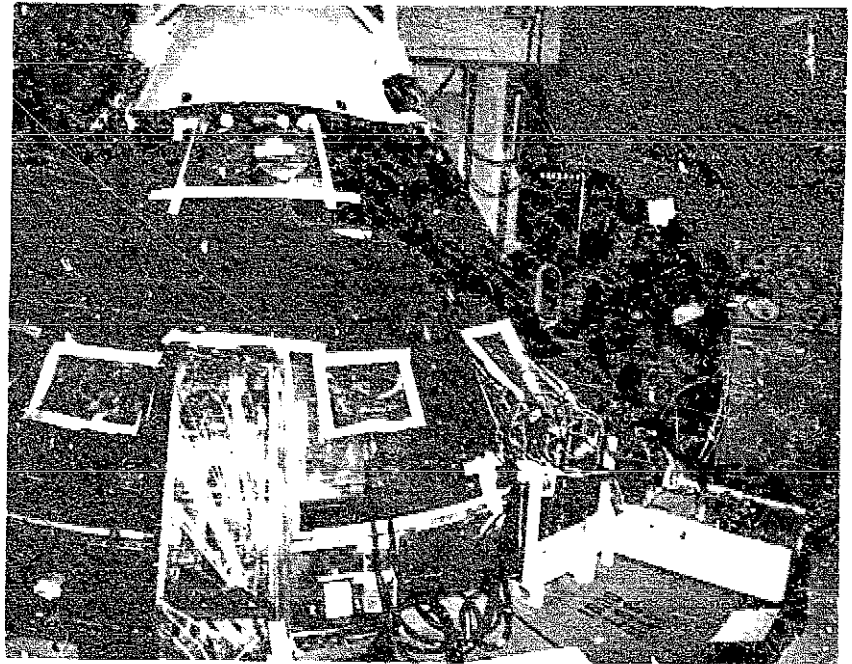


CAMERA No. 55B (Cont'd.) Fill ports and RCS Motors.

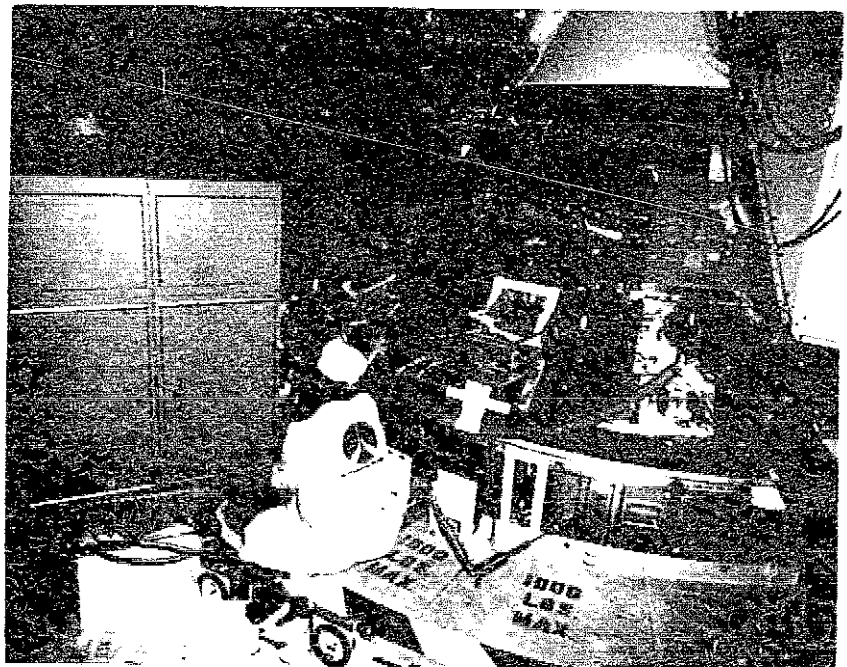
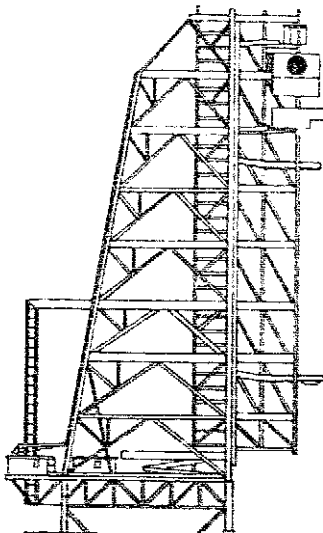


CAMERA No. 56B; located MSS level 4C; coverage; CM HE port and umbilical disconnect.

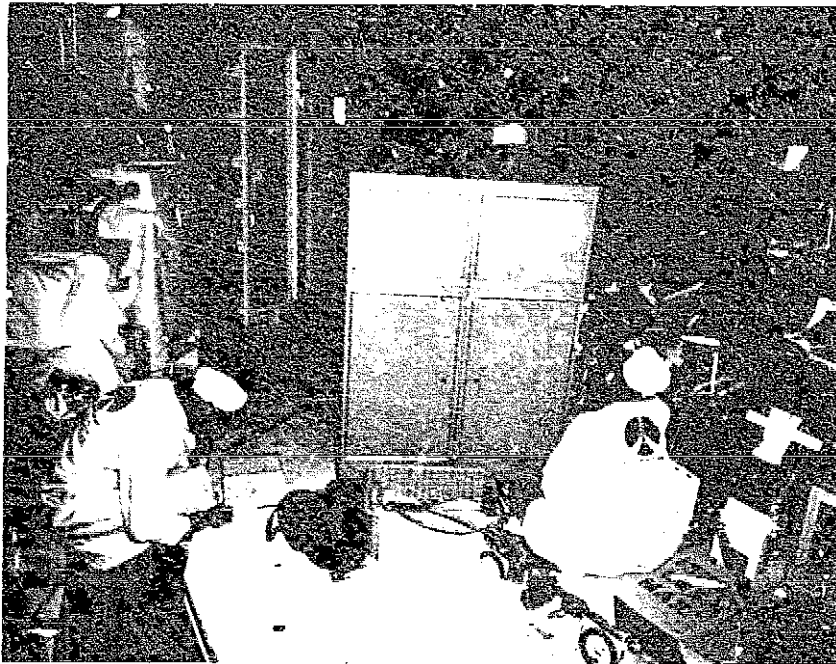




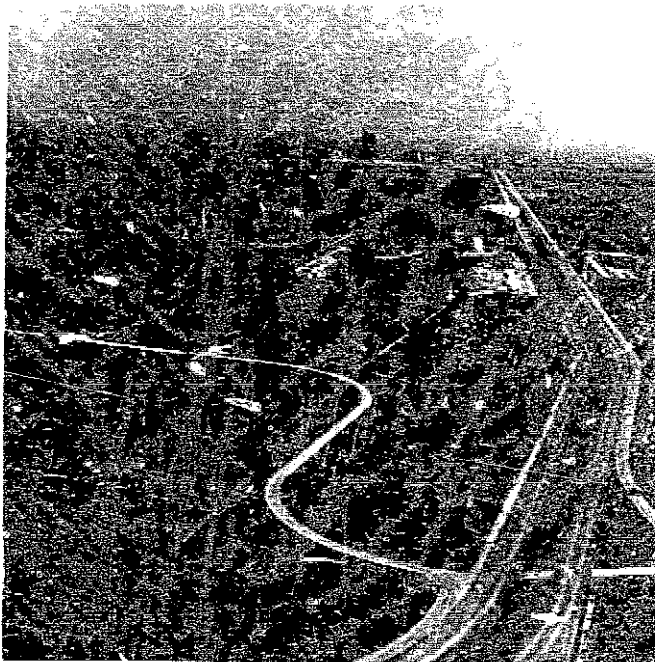
CAMERA No. 56B (Cont'd.) CM HE port and umbilical disconnect.



CAMERA No. 57B; located MSS level 4C; coverage: CM HE service.



CAMERA No. 57B (Cont'd.) CM HE service.



CAMERA No. Roof; located VAB roof, SE corner;
coverage: Crawler way and pad area.



CAMERA No. Roof (Cont'd.); Kennedy Parkway for coverage of astronaut transfer van.




CAMERA No. Roof (Cont'd.); Turn basin and roadway south of VAB.

APPROVAL


GP929A

OTV CAMERA
REFERENCE HANDBOOK

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END

DATE

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AUG 6 1973